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BULLETIN
OF THE
UNIVERSITY OF TEXAS

1915 : No. 2.

JANUARY 5

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The High-School Program of Studies

BY

Thomas Fletcher
Assistant Visitor of Schools



Published by the University six times a month and entered as second class matter at the postoffice at Austin, Texas

Monograph

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The benefits of education and of useful knowledge, generally diffused through a community, are essential to the preservation of a free government.

Sam Houston.

Cultivated mind is the guardian genius of democracy....It is the only dictator that freemen acknowledge and the only security that free-men desire.

Mirabeau B. Lamar.

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THE HIGH-SCHOOL PROGRAM OF STUDIES.

INTRODUCTION.

The many requests from superintendents and high-school principals for suggestions on the arrangement of a program of studies for Texas secondary schools has induced the writer to attempt the preparation of a bulletin on the subject of *The High-School Program of Studies*. A considerable part of the matter herein presented is quoted from recognized authority, and little originality is claimed for the conclusions drawn. While certain principles of procedure are advocated, the recommendations presented are merely suggestive and are not announced as exhaustive or prescriptive. No attempt has been made to secure all the data on the problem considered; but merely to accumulate some evidence as an indication of the practice in Texas and elsewhere.

In order to determine the factors that should be considered in making a high-school program of studies, it has seemed advisable to examine at considerable length a few of the most prominent authorities on secondary education in the United States; also the reports of representative committees that have vitally influenced educational progress in this country have been given much weight in arriving at principles. It may seem to the reader that undue weight has been given to the authorities cited; but it seems to the writer that radical changes in educational procedure are likely to be dangerous and that the safest course is to follow experience and successful practice.

While the purpose of the bulletin is primarily to determine some of the underlying principles of the high-school program of studies, yet such related problems as over-taxing pupils, over-taxing teachers, the introduction of sciences, and vocational subjects, the assignment of teachers, the advantages of the small high school, etc., will be briefly treated. As a conclusion from the discussion a few type programs will be presented.

It is hoped that the bulletin may prove helpful to teachers who are far removed from library facilities and who are confronting the problem of providing suitable, consecutive, correlated work for a group of high-school pupils.

TERMINOLOGY.

It will be evident to any one who contemplates the subject that the term *course of study* is used to convey a variety of meanings. It is often used to mean all the subjects offered in the high school. Again, it is used to mean a group of subjects, as the Classical Course, Modern Language Course, etc. It is also used to mean one subject running through one or more years, as the History Course, etc.

Even in a brief discussion it seems advisable to avoid confusion by using a term to mean one and only one thing. In order that terms may have a specific meaning, the terminology adopted by the Committee on College Entrance Requirements will be used except in quoted matter. This Committee makes use of three distinct terms, (1) *Program of Studies*, which includes all of the subjects offered in a given high school; (2) *Curriculum*, which means the group of studies schematically arranged for any pupil or set of pupils, as the *Modern Language Group*, *Science Group*, etc. (usually designated as modern language course, etc.); (3) *Course*, which means the quantity, quality, and method of work given in any particular subject of instruction as the *Mathematics Course*, *History Course*, etc. The writer, in this discussion, will attempt to use these terms in the restricted sense indicated.

Since the material contained in this bulletin was collected from a variety of sources, exact reference to title and page has not always been given. Bulletins issued by a number of universities and associations, catalogues issued by some of the representative high schools, a few standard treatises on secondary education, and the answers to numerous letters sent to leading school men furnish the sources of information from which this bulletin has been compiled. A brief list of references will be given at the end of the discussion.

SOME QUESTIONS THAT ARISE IN PLANNING A PROGRAM OF STUDIES.

1. What are the indispensable subjects that should be required of all high-school pupils?
2. Should a foreign language be required?
3. When should a foreign language be introduced?
4. What should be the minimum requirements in mathematics?
5. Should a natural science be required?
6. What science should be first introduced? What should be the science order?
7. When should vocational subjects be introduced; to what extent should they be introduced; what should be their status in relation to other subjects?
8. Should each pupil recite each subject every day?
9. What is the maximum number of class periods that should be required of the pupil each day?
10. What is the maximum number of class periods that can be successfully conducted by the teacher each day?

The foregoing are some of the questions that must be answered in working out a rational program.

ACCEPTED PRINCIPLES.

An examination of the authorities and reports on secondary education shows a decided lack of unanimity of opinion on most of the aspects of the subject of high-school education. There seems, however, to be a few general principles and methods of procedure that are agreed upon by practically all students of the field.

1. *It is admitted that there should be a core of constants required of all high-school pupils.* As to the subjects and quantity that should be prescribed, there is difference of opinion. It may be safely announced that for the American high schools the program of studies should contain English, mathematics, and history. As to the quantity of each of these subjects, there would not be a unanimous opinion. Perhaps the bulk of authority favors the addition of a foreign language and a science, other

than mathematics. The question of requiring a foreign language of all pupils is a vigorously contested point. A respectable body of opinion inclines to the substitution of a science or vocational curriculum as an alternative for the foreign language. There is a considerable minority that insists on a classical language, preferably Latin. The writer believes that for girls, in schools financially able to offer it, domestic economy should be included in the group of constants.

2. It is generally conceded that *local conditions and the subsequent activities of the pupils are factors deserving consideration in the making of a program of studies.* Many communities are financially unable to provide facilities for giving the sciences or vocational subjects. A school may fail to secure a teacher for the foreign language. The dominant interest of the locality may be agriculture, manufacturing, etc. The high-school program of studies should be modified by the financial condition and the special interests of the section which it is to serve.

3. It is pretty generally conceded that *the high-school program of studies should, as nearly as conditions will permit, fit its graduates for college.* It is a sound democratic theory that the doors of higher institutions should be kept constantly open to the ambitious youth, and that his training, in so far as possible, should prepare him both for the duties of life and the continuation of his education.

4. A fourth general principle that is acknowledged by the authorities on the subject of high-school programs of studies is that *the subjects introduced into the program should be continued until they have yielded the training for which they stand.* The time required to realize on the different high-school studies will vary with the studies and the conditions under which they are given. A half year may be sufficient for physical geography, provided it is taught some five times a week, and provided the student is not carrying too many other subjects. Three or four years are required to carry Latin to the point of fruition. In the case of any subject taken up by the student, it seems reasonable to insist that he carry it until he gets returns on the time and energy which he has invested.

5. Every high-school program of studies *should afford the pupil access to representative subjects from each of the great departments of human experience and, in so far as conditions will permit, should, at the same time, provide for extensive and intensive work in subjects that are in harmony with the student's propensities and needs.* This means that in addition to the traditional academic subjects there must be offered specialized subjects that call for much motor activity on the part of the pupils.

6. The new conception of the function of the high school gives rise to a new principle that must enter into the making of a program of studies. This new principle requires *flexibility in the program. The transition from one curriculum to another must be made as easy as possible.* Pupils do not know their aptitudes on entering the high school, and they must be given some time for finding themselves. When a pupil finds that he has entered upon the pursuit of an uncongenial curriculum, he should not be condemned to follow this curriculum to graduation, or else drop out of school.

The doctrine that the high school should confine its activities to purely cultural subjects has few advocates in the present day. If it be acknowledged that the subsequent activities of the pupils should, to some extent, determine the studies that enter into the program, it seems to the writer that, in those schools offering domestic economy, some training in that subject should be required of all the girls. It is impossible to predict the type of work that will be taken up by any considerable number of high-school boys after they leave school. Some 90 per cent of the high-school girls are sure to engage in the business of home-making and home-keeping. If specializing is ever warranted—and we believe that it is—it is reasonable to prescribe domestic economy as providing practical training which will increase the efficiency of more than half of the student body in its subsequent activities. The girl can easily carry the minimum amount of the few subjects that make up the group of constants, and, at the same time, do the domestic economy course and still have the opportunity of electing additional congenial subject matter.

It may not be an accurate use of language to speak of domestic economy as a constant, and at the same time admit that

many schools will be unable to offer the course. But it is the opinion of the writer that many schools would come nearer to rendering the maximum service to the maximum number of students, if they would substitute for some of the studies now offered a well taught course in domestic science and art. When such a course is offered it is the contention of the writer that it should be considered a constant for all girl students.

Keeping in mind the six generally accepted principles, we may put in schematic form, for the purpose of comparison, the core of prescribed subjects with the varying quantities of each that have been urged by different authorities.

TABLE I.

English (minimum, 2 units).

Mathematics (algebra and possibly plane geometry, 2 1-2).

History (minimum, 1 unit).

Total 4 1-2 or 5 1-2 units.

Table I represents the minimum of prescribed work.

TABLE II.

English.....3 units.

Mathematics.....2 1-2 units (algebra and plane geometry).

History.....2 units.

Total.....7 1-2 units.

The constants in Table II do not represent an excessive amount of prescribed work, and few authorities would object to either the subjects or the quantities required.

TABLE III.

English.....3 units.

Mathematics.....2 1-2 units.

History.....2 units.

Foreign language.....2 to 4 units.

Science.....1 unit.

Total.....10 1-2 or 12 1-2 units.

As the number of prescribed units is increased, the number of advocates for any group is decreased. A large number of edu-

cators advocate the plan of making the foreign language optional with a science or a vocational curriculum. In the writer's opinion the following table affords a reasonable core of prescribed subject matter:

TABLE IV.

English.....	3 units.
Mathematics.....	2 1-2 units.
History.....	2 units.
Domestic Economy (prescribed for girls)	.1 unit.
Total.....	8 1-2 units for girls. 7 1-2 units for boys.

In this case, if 16 units are required for graduation, the girls would have the opportunity to elect 7 1-2 units. An additional 1-2 unit in domestic economy, 2 units in science, 1 additional unit in history, and 4 units in a foreign language would total the 16 units, and would enable the student to dip into science, the humanities, and economic science. In exceptional cases, it might even be wise to reduce the mathematics required. Following this table, boys would be allowed 8 1-2 optional units.

Both for cultural and practical reasons, it seems to the writer that every high-school student should be required to carry English for the entire four years. There is no subject available to the high-school pupil that is so rich in cultural value and so useful in a material way as English. One's thinking is largely conditioned by one's knowledge of the mother tongue. Certainly, one's power to organize and express thought is determined by his mastery of the vernacular. It is difficult to conceive of a vocation in which an extensive knowledge of English would not be of great practical benefit. There are few accomplishments that are calculated to give as much continual and permanent pleasure as the cultivated habit of reading and the ability to interpret and appreciate the thought of the master minds of the past and the present. The study of English yields both insight and technique; our English information is in constant use. Indeed, it is difficult to make efficient use of any knowledge without the power of expression. In Texas, experience has shown that it requires, in most schools, four years to do three units in English. It is urged that the Texas high schools require four

years of English of all students. Of course, if a school is able to do four units of English in four years, it might possibly be desirable to make the fourth unit optional. However, where schools require eighteen or twenty units for graduation, it is highly improbable that they will be able to do four units of English in four years.

It is evident that for the small three-teacher high school, practically all the studies offered must be prescribed. In such schools it will not be possible to offer domestic economy, and, at the same time, keep the school up to standard in other subjects. In making a program of studies the constants should be provided for first, then such electives as seem best suited to local conditions should be introduced.

THE FUNCTION OF THE HIGH SCHOOL.

The social, economic, and industrial conditions of the present time have forced upon us a new conception of the function of the secondary school. The slogan of the day is *efficiency*, and the aim of education as stated in the "lingo" of the hour, is *social efficiency*. The insistent demand that the high schools shall turn out a more varied and self-sustaining product to satisfy the varied needs of the community must be met by modifying and enriching the programs of studies.

The public high school is obligated, in so far as conditions will permit, to so instruct and train the pupil as to make him a moral, industrious, sympathetic, intelligent, and progressive citizen. He must be efficient as an individual and in all of his relations as a citizen. To this end all high school pupils must have prescribed for them certain cultural subjects. It must be assumed that, for a large number of the pupils, the high school will furnish their last chance for formal training. It is important that such pupils should have some training for properly enjoying their leisure. During the high-school period, the pupil should develop some capacity for appreciating the finer things of life. He must dip into the humanities and the sciences in order that he may appreciate and enjoy the works of man and the phenomena of nature.

The pupil must be furnished the opportunity for testing his powers and discovering his propensities in a wide field of subject

matter. The pupil should be led to determine his vocational inclinations and to form some life purposes.

While it is not contemplated that pupils should be encouraged to specialize intensively,—certainly, pupils should not be permitted to carry vocational subject matter exclusively, yet, high schools that are financially able to provide teachers and equipment for vocational work, should accept the obligation to prepare pupils for earning a living by fitting them for specific vocations. The Committee of Nine expressed the idea admirably in the N. E. A. Proceedings of 1911.

“Not only is it the duty of the high school to lay the foundations of good citizenship and to help in the wise choice of a vocation, but it is equally important that the high school should make specific contribution to the efficiency of the individual along various broad lines. In our industrial democracy the development of individual aptitudes and unique gifts is quite as important as the development of the common elements of culture. Moreover, hard work is to be secured not by insistence upon uniformity of tastes and interests, but by the encouragement of special effort along lines that appeal to the individual. Our education would gain in power and in virility if we made more of the dominant interest that each boy and girl has at the time. It would seem that some have come to believe the oft-repeated statement that the liberal should precede the vocational; but an organic conception of education demands the early introduction of training for individual usefulness, thereby blending the liberal and the vocational; for only then does the liberal receive its social significance and importance. In other words, the boy who pursues both the liberal and the vocational sees the relation of his work to the work of others and to the welfare of society; whereas the liberal without the vocational leaves him a mere spectator in the theatre of life and the boxes in this theatre are already overcrowded.”

Less than one per cent of the youth of America attends college and less than five per cent of the high-school graduates goes to higher institutions of learning. Considering these facts, the high school can not afford to confine its efforts solely to the preparation of pupils for college; but it must aim to give the youth the training best suited to his needs, considering the environment into which he is to enter after leaving school.

**VOCATIONAL
TRAINING**

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**PREPARATION
FOR
COLLEGE**

In too many cases, ambitious superintendents and teachers are sacrificing the interests of their pupils in order to carry out a program of studies which will fit for college.

On the other hand, it is most desirable that the pupil be inspired to continue his education. A highly educated man may be of greater service to the community than a large number of untrained men. In order that encouragement may be given the youth to continue his training, the transition from the high school to the college must be made easy; the door to college ought to be kept open to as large a number of pupils as possible. The pupil hesitates to go to college if he must take examinations to enter, and, if his training has not even prepared him for taking the examinations, he is not likely to make the necessary effort for getting into higher institutions. Thus it would seem that it is a matter of judgment as to whether, in a particular case, the school shall ignore the requirements for entrance to college and confine its efforts to preparing the student for his duties in the community.

Perhaps, as a rule, the training best suited to the needs of the pupil will at the same time prepare him for college. A considerable number of public school men have insisted that the best preparation for life was good preparation for college, while many college men have maintained that the proper preparation for college was a good preparation for life. The proponents of these respective propositions by no means agree when it comes to providing the program of studies for the high-school pupil. To the unbiased on-looker, it seems decidedly probable that neither the college nor secondary school men are entirely correct for all cases. Local conditions may be such as to warrant the particular school in devoting a large part of the time to commercial subjects. In such a case, the pupil may receive the kind of training that fits him for his environment, but may, by no means, prepare him for successfully taking up college work. On the other hand, if the pupil must spend a large part of his time in the study of the classics and mathematics, when his purpose is to engage in building houses, it seems evident that the pupil has not been prepared for the field of work into which he plans to enter.

Two teachers may undertake to give three or four years of high school work. In such a case, the students must take all the

work offered. Certainly such a school cannot hope to offer all the subjects that high-school students ought to have. It seems absurd to argue that a school with such a limited teaching force can prepare the pupil equally well for both college and life. As a matter of fact, it can prepare for neither. But if it is to have any success, the subjects must be limited to either one field or the other; the school must take either the vocational line or the cultural line.

While our colleges have been directed by conservative men and have been slow in adjusting their courses and entrance requirements to new needs and conditions, still there is manifest among college authorities a growing sympathy and co-operative spirit toward the secondary schools. These men realize that the high school must meet local needs and that the colleges must modify their requirements so as to articulate with the new type of high school. There is evident an eager willingness on the part of college administrators to make reasonable adjustments to high-school needs.

To affiliate with the University of Texas a school needs only to prepare its graduates for the Freshman class in English (3 units), History (2 units), and Mathematics (algebra and plane geometry, 2 1-2 units), in all 7 1-2 units. Affiliation sufficient to enable graduates to enter without conditions includes enough other units to make 14, at least three of which must be in a foreign language. Affiliation sufficient to enable graduates to enter the University conditionally includes enough other units to make 12.

It will be noted that a student may enter the University on twelve units and without a foreign language. The student who is well prepared in twelve units may take up a foreign language after entering the University, and can easily absolve his language condition and graduate in four years. That the high-school student may prepare for the Texas colleges and at the same time have much freedom in his choice of subjects, is indicated by the following groups of subjects, which may be offered to satisfy the entrance requirements of the University.

Prescribed:

- (1) English, 3.
- (2) History, 2, chosen from the following:
 - Ancient History, 1.
 - Mediaeval and Modern History, 1.
 - English History, 1.
 - American History, 1.
- (3) Mathematics:
 - Algebra, 1 1-2.
 - Plane Geometry, 1.
- (4) Foreign Languages:
 - One foreign language, ancient or modern, 3, or two foreign languages, other than Latin, 2 each.

Affiliation in a foreign language is strongly advised, but will not be enforced until further notice is given.

Elective:

- (1) English, 1.
- History and civics (not more than four units may be presented by the same graduate):
 - (2) Ancient History, 1.
 - (3) Mediaeval and Modern History, 1.
 - (4) English History, 1.
 - (5) American History, $\frac{1}{2}$ or 1.
 - (6) Civics, $\frac{1}{2}$.
- Mathematics:
 - (7) Solid Geomerty, $\frac{1}{2}$.
 - (8) Trigonometry, $\frac{1}{2}$.
- Foreign Languages:
 - (9) Latin, 3 or 4.
 - (10) Greek, 2 or 3.
 - (11) German, 2 or 3.
 - (12) French, 2 or 3.
 - (13) Spanish, 2 or 3.
- Natural Sciences:
 - (14) Physiography, $\frac{1}{2}$.
 - (15) Physiology and Hygiene, $\frac{1}{2}$.
 - (16) Physics, 1.
 - (17) Chemistry, 1.
 - (18) Biology, 1.
 - (19) Botany, 1.
 - (20) Zoology, 1.

A student offering biology for entrance may not present either botany or zoology.

Vocational subjects (not more than two units may be presented by the same graduate.):

- (21) Agriculture, $\frac{1}{2}$ or 1.
- (22) Bookkeeping, $\frac{1}{2}$.
- (23) Domestic Economy, 1 or 2.
- (24) Drawing, $\frac{1}{2}$ or 1.
- (25) Manual Training, $\frac{1}{2}$ or 1.
- (26) Stenography and typewriting, 1.

As the high schools introduce new subjects and establish them on a par with the old subjects, the University adds them to the college entrance list. The aim is to give the student all the latitude possible, during his high-school period, to select subjects congenial to his taste and suited to his needs. Of course, if the student devotes himself wholly to vocational subjects, he is more than likely to find that he has failed to prepare himself for taking up college work. Whether it is possible or desirable to so modify the college program of studies as to admit all applicants is a question for the future. Certainly few educators would advocate so radical a procedure at the present time. One cannot expect to spend his time preparing to be a cabinet-maker and suddenly switch to the study of medicine or theology. It is a matter of common information that success in any field of endeavor presupposes certain preliminary steps in preparation.

It may be the part of wisdom for any particular youth to stress vocational subject matter. His environment and subsequent activities may be such as to make this the logical course. The point is, that he must understand that he is not getting the necessary preparation for college. Indeed, there may be many small high schools that can best serve their communities by emphasizing the vocational and industrial courses to the exclusion of college preparatory courses. In such cases the duty is clear. However, it should be clearly understood that the small school cannot hope to do efficiently a college preparatory course and at the same time succeed in doing intensive work in the industrial and commercial courses. The school with limited teaching force must determine which field it is to stress.

THE TEACHING FORCE.

The most vital and the one indispensable component of any high school is the teaching force. The high-school program that is made without reference to the number of teachers and their preparation will be a good program only by accident.

The number of teachers that can be employed in the high school determines the program of studies as to its extent. One com-

**THE
NUMBER OF
TEACHERS**

petent teacher can do well one year of high-school work, but when he undertakes to do two years, the standard is very likely to be lowered.

To carry two years of work will require a minimum of eight recitations per day. These recitations, according to authoritative opinion, must be approximately forty minutes in length. In addition to this excessive amount of recitation work, the teacher must be able to present effectively a variety of subjects, and must take written work from his classes in their various studies. Few teachers are able to maintain a high degree of teaching efficiency under such conditions. It is very questionable whether one teacher should attempt two full years of high-school work. It seems highly probable that the students are really the losers when such an attempt is made. One year of high-school work well done is better for the pupil than two years perfunctorily done. The pupil who develops good habits of study has achieved more than the pupil who has covered a large number of pages and has mastered little of the subject matter.

Two competent teachers can carry successfully three years of high-school work. They will have a minimum of six class periods each per day, which, in the small school, is not too much. Also two teachers will be able to partition the work to the advantage of each. It is possible for two teachers to cover four years of work with a minimum of eight recitations each per day. Nothing is gained in attempting this except the gratification of local pride that comes from maintaining a four-year high school. Such schools rarely do three solid years of high-school work in the four years. Students form the habit of going at slow speed, and low standards are the rule. To an on-looker it seems absurd to spread a three-year program over four years when it results in seriously over-taxing the teachers and decidedly lowers the efficiency of the school. It is too great a concession to make to the mere name, *four-year high school*.

Three competent teachers can do satisfactorily the work of a four-year high school. The minimum number of class periods will be sixteen per day. If the principal carries four recitations, the other teachers will have six each. Unfortunately, the effi-

ciency of the three-teacher high school in Texas is too often reduced by expanding the program of studies beyond the ability of the teaching force to carry the numerous classes created. No other thing has caused so much superficial work and been so destructive of school standards as the fruitless ambition of some communities and school authorities to fill their high-school program with all the subjects they can find in a city school catalogue. A glance at the announcement of some schools is sufficient to enable one to pass judgment on the character of the work. One school employing three teachers in the high school, presents the following program of studies:

	Recitations per week.
English for four years.....	20
Mathematics (through Trigonometry) four years...	25
Arithmetic—two years.....	10
Latin—four years.....	20
German—three years.....	15
Spanish—three years.....	15
Physics—one year (no laboratory).....	5
Chemistry—one year (no laboratory).....	5
Physiology—one year.....	3
Agriculture—one year.....	5
Spelling	5
Total	128

(This school is anxious to put in manual training.)

It will be noted that each teacher must conduct more than eight classes per day. The variety of subjects is such as to make it practically impossible to secure three teachers who can teach the studies offered. One does not have to see this school to know that it represents largely wasted effort. One does not have to witness the experiment to know that a twenty-horse power engine cannot pull a half mile string of loaded freight cars. The sad thing about it is that the school might, with a reasonable program, give good service to the community.

While the case cited may be extreme, there are many schools in the State that are wasting much of their effort in their attempt to carry an extended program of studies.

The preparation of the teaching force is another factor that must determine the subject matter that is to be introduced. The small school that must pay small salaries may reasonably expect to be able to secure teachers for history, English, mathematics, and possibly a foreign language; but a competent science teacher, or a capable teacher of vocational subjects is more difficult to find, especially if the pay is low. The demand for such teachers is strong, and it cannot be expected that a salary of \$65 or \$75 per month will always get the teacher wanted. The school that puts in domestic economy or manual training and has only \$60 or \$65 per month for a teacher had better omit the subject until more funds are available. It is folly to put in subjects and have them taught by teachers who have had no training in them.

In order to emphasize the need for a greater supply of trained teachers for the Texas high schools, and in order to indicate the sources from which high-school teachers are obtained, it has seemed advisable to give the results of a study of the scholarship of the teachers in 159 schools affiliated with the State University. These schools were taken because among them are found practically all the strong high schools in the state, and because the information on their teaching forces was available.

The statistics that follow were made up from the data that are furnished yearly by the affiliated schools, and deal with the teaching forces in 159 high schools for 1913-1914. In some instances the reports are not very clear as to the preparation of the high-school teachers.

The purpose of the study was primarily to determine the character of the training of the teachers in the affiliated schools. In some cases the classification has been somewhat arbitrary. One term's attendance at a summer school has not been considered college training. In so far as it could be determined from the reports, teachers who have had less than a year's college work have been classed as having no college training. Teachers who have had from one to three years of college work have been classed as having some college training. Graduates of junior colleges have been placed in the "Some College Train-

**THE
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OF
TEACHERS**

ing" group. Teachers who have not graduated are included in the "Some College Training" group without reference to the school in which they received their training.

	Some College Graduates.	College Training.	Some College Training.	No College Training.
On Southern Accredited List, 32				
Schools	334	111	18	
Remaining 127 Affiliated Schools...	338	207	143	
Total for 159 Affiliated Schools....	662	318	161	
Total Number of Teachers.....		1141		
College Graduates.....			58+%	
Some College Training.....			27.8%	
College Graduates and Some College Training.....			85.8%	
No College Training.....			14+%	

It is interesting to note that, out of the 662 college graduates teaching in the 159 affiliated schools in Texas, 284 hold their degrees from colleges out of the State. The University of Texas supplies 207 of the teachers who are graduates, while all the other colleges tabulated below furnish 168.

INSTITUTIONS FURNISHING THE TEACHERS FOR 159 SCHOOLS
AFFILIATED WITH THE STATE UNIVERSITY—1913-1914*

For 32 Schools on Southern Accredited List.	No.	For Remaining 127 Affiliated Schools.		
		No.	Totals.	
Out of State Institutions....	154	130	284	
University of Texas.....	115	92	207	
Baylor	25	41	66	
Southwestern	17	30	47	
Polytechnic	5	9	14	
Trinity	10	9	19	
T. C. U.	7	7	14	
Austin College	2	3	5	
A. & M.	3	2	5	
C. I. A.	12	14	26	
State Normals	10	83	93	
Per Cent of Out of State Graduates.....			27.8	

*The above list includes only those teachers who are graduates of the institutions enumerated.

It is gratifying to discover that the scholarship of the teachers in the affiliated schools has decidedly improved since a similar study was made three years ago: but it is clearly evident that the supply of competent teachers is inadequate. The schools that are financially able to pay reasonable salaries soon exhaust the supply of competent teachers, and those schools that can

only pay \$65 or \$75 per month must take the untrained teachers that are rejected by the other schools.

In the two or three-teacher high school it will, of course, be impossible to follow in full the departmental plan of teaching.

**THE
ASSIGNMENT
OF TEACHERS** But, even in the small school, better results will be secured, if the assignment of work is made so as to approximate, in so far as conditions will permit, the departmental system.

It will usually be found that teachers have had more preparation in some subjects than in others; it will also be found that teachers have preferences as to the subjects that they are to teach. Other things being equal, the teacher will do his best work in the subject for which he has a liking and in which he has the most training. It would seem, then, that in assigning work to the teaching force, the superintendent should take into consideration, in so far as possible, the teacher's training and inclination. It too often happens, in the small school, that each teacher teaches some class in each of the subjects offered. Such practice prevents the teacher from developing power along any line, and so scatters his efforts that he is unable to do, in any subject, the best teaching of which he is capable. It would appear that the time has come when school boards should not merely engage a teacher to teach in the high school, but should employ a teacher of English, mathematics, or for whatever subject a teacher is needed. It is certainly a dissipation of energy when school A has a good teacher of mathematics who must struggle along trying to teach English, while school B has a fine teacher of English who must teach mathematics for which he has neither training nor taste. There are few teachers who stand ready to teach well every subject offered in the high school, and the only way to avoid misfits is to insist on a teacher for specific subjects.

In the small schools, it seems advisable to first put on the departmental plan those subjects that run through three or four years of the school, as English, mathematics and foreign languages. As the school grows, the history and science may be put on the same basis. As a rule, people who prepare for teaching in the high school will be able to teach two subjects.

In fact, teachers deliberately prepare, in many cases, to teach two subjects. It is the practice for those preparing to teach high-school mathematics to take a science, usually physics. English teachers often prepare in Latin. Hence, provided discretion is used in selecting teachers, the two or three-teacher school will be able to group subjects so as to have teachers specially prepared for presenting the various courses offered.

It is decidedly the business of the superintendent to recommend teachers for vacancies, and his fitness for the place of superintendent is, in considerable part, determined by his ability to secure competent teachers. It is unfortunate, indeed, when the school board undertakes to employ teachers independent of the advice of the superintendent. School boards, in the nature of things, cannot be competent judges of teachers. When the school board selects the teaching force on its own responsibility, it may be expected that much unprepared home talent will be introduced into the school system, and that many misfits will practice on the children of the community.

It is not contended that the high school teacher should be highly specialized in his training; but it is contended that, no matter how liberal his training, the teacher cannot get best results by scattering his efforts over the whole program of studies. Schools that are achieving best results are following, more or less closely, the departmental plan of teaching.

EXPANDING THE PROGRAM OF STUDIES.

As has been pointed out, the small three-teacher high school will of necessity confine its efforts largely to the constants—English, history, and mathematics. Such a program gives no special training for any particular vocation, but it gives a cultural and disciplinary training to all, and it furnishes a foundation of information to the students which fits them for specializing at a later date. If vocational subject matter be introduced with the small teaching force, and, if the vocational subjects are taught with sufficient intensity to yield results, the constants must be neglected. In that case there will be a large per cent of the student body that will not be specially benefited by the vocational subjects, in that it is impossible to predict

the subsequent activities of a large per cent of the pupils. If domestic economy be given only the girls are benefited, and if manual training be given the girls are not likely to be benefited. On the ground of the greatest good to the greatest number, it seems the logical and reasonable procedure to insure sufficient time and adequate teaching force for the proper presentation of the constants, before introducing either science, foreign language, or vocational subject matter.

Some small high schools in Texas that were just able to teach well the minimum of English, history, and mathematics, have, in the last few years, put into their program of studies domestic economy, agriculture, manual training, and one or two sciences and are trying to carry all this subject matter with four or five high-school teachers. Salaries are too low to secure expert teachers; consequently the vocational work is poorly done and the standard of the literary work is lowered. In some cases, teachers of other high-school subjects are expected to teach the vocational subjects, notwithstanding that they had no training for the work. Such practice merely puts worthy subjects into disrepute and contributes little to the training of the pupils. A deplorable result of such over-expansion is that the standards of all the high-school courses are lowered and pupils form the habit of doing inaccurate, superficial work. Poorly taught "snap" courses have a demoralizing effect upon the high-school student body.

It costs more to secure competent vocational teachers than to secure teachers for the other subjects, and the value of the vocational subjects is largely dependent upon the skill of the teacher. The writer has no desire to deprecate the worth of the manual arts. On the contrary, the great value of these subjects is recognized. But it is no part of wisdom to put in these subjects without providing adequate facilities and competent teachers for maintaining them. Also, if we accept the doctrine that there is an irreducible minimum of constants that must be required of all students, we must not let vocational subject matter infringe upon this core of constants.

A number of our high schools are spreading their efforts over two or three sciences when they are barely able to provide the teaching force and facilities for doing a single science well. The

writer knows schools in which physics, chemistry and botany are offered without adequate equipment for doing any one of these subjects satisfactorily. Indeed, the teacher has insufficient time to do more than one science, even if he had the necessary apparatus. What advantage can there be to the pupils in giving, in a slip-shod, superficial manner three sciences? It seems to the writer that it would be infinitely better to give one science well. The pupils would get the proper conception of scientific procedure, and would receive the training for which real science work stands.

When a school reaches the point in its development where it is able to do well the constants, and is ready to introduce more subject matter, the question arises as to what subject or subjects shall receive the preference. This question must be answered by reference to the principles underlying program making. It costs less to introduce a foreign language than to provide for science or vocational subjects. If pupils intend to continue their education beyond the high school, and if funds are limited, it would seem the best policy to introduce a foreign language. The language will be of decided advantage to pupils who desire to enter higher institutions of learning. If pupils go at once from the high school into commercial, agricultural or industrial pursuits, and if the finances will permit, it may be best to introduce manual arts, science courses or commercial courses. Here the needs of the community and the subsequent activities of the pupils are the determining factors.

With the introduction of sciences, the question arises as to which science should come first, and as to the order in which they should be given. There is much difference of opinion as to these questions. Perhaps physical geography and physiology should be given first place if only one year of science can be given. In that case physical geography might be given the first half of the first year and physiology and hygiene the second half, or physical geography might be given three times a week in the first year and physiology three times a week the second year. Of course, if these are the only sciences given they may be placed at any convenient point in the program. The argument for giving physical geography first choice is that it gives the pupil a peep at the whole field of science and stimulates in

him an appreciation of the natural forces around him and creates a desire for further study of the sciences. Physiology is to be studied because of the practical value of the information. After these two sciences have been given a place, the practice has been to favor physics as the next science to be introduced because of its disciplinary value. In the opinion of the writer, local conditions should determine the choices of the second science unit. If the community is engaged in agriculture or stock raising, it may be most advantageous to give botany, zoology, or agriculture. If the community is an industrial one chemistry may serve better than physics. In other words, the factors that enter into the making of a program should receive due consideration in introducing the sciences. A four-year science course might be arranged as follows:

First Year.

Physical Geography, $\frac{1}{2}$ year.....	5P+*
Physiology and Hygiene, $\frac{1}{2}$ year.....	5P+
<hr/>	
Total	5P+

Note: *The plus sign after the number of periods assigned to a science indicates that one or two of the periods must be double laboratory periods.

Note 2: If pupils are carrying five subjects it is doubtful if they will do satisfactorily both the physical geography and physiology in one year. It is the belief of the writer that half units in science should, as a rule, be avoided.

The temptation is strong to assign half units in science to teachers who have had no science training, on the ground that one can teach a half unit of a subject without preparation. Physiography and physiology are subjects that perhaps lend themselves to the half-year treatment; but too frequently these subjects are poorly presented because of the assumption that it takes no special training to present a half unit in science.

If the two sciences mentioned be excepted, the writer believes that it is advantageous to offer unit courses in the sciences.

Second Year.

Botany, Zoology, Biology or Agriculture.....	5P+
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Total	5P+

Third Year.

Agriculture or Chemistry	5P+
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Total	5P+
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Fourth Year.

Agriculture, Chemistry, or Physics	5P+
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Total	5P+
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Note: All the sciences should have double periods for laboratory practice. If five periods are assigned to a science, two of them should be double periods, making a total of seven periods per week.

In the case of chemistry and physics, the tendency is toward the practice of giving chemistry in the third year and physics in the fourth year.

Biology may be substituted for physical geography and physiology in the first year.

If service to the greatest number of pupils is to be the determining factor, domestic economy should be the first vocational subject introduced. In some communities commercial courses may contribute practical training to a large number of the pupils.

Not only is it desirable to limit the studies offered in the high school to the capacity of the teaching force, but it is especially desirable that the work of the elementary school be not sacrificed in order that high-school subjects may be offered. It too often happens that too few teachers are employed and salaries are skimped in order that money may be saved for the purpose of maintaining a high school. No community can afford to diminish the efficiency of the elementary school in order to provide for high-school work. A very large per cent of the public school pupils are to be found in the elementary school. If there is to be satisfactory high-school work, the elementary school subjects must be well taught. Hence, it is extremely doubtful whether a community is ready to introduce high-school subject matter until it is able to employ at least four teachers in the elementary school. With four good teachers, it may be possible to do a little algebra and some history, but certainly very little should be undertaken. The youth had bet-

ter have a firm grasp of the fundamental essentials,—the tools for acquiring knowledge,—than a hazy notion of a few high-school subjects.

A considerable number of small schools in Texas are dissipating their energies by attempting to do high school work when they are barely prepared to do good elementary work. It is a foolish pride that leads communities to put on the finish when there is no foundation. Indeed, the writer knew a village that assumed the prestige of a college center because, forsooth, it maintained a one-teacher school in which geometry and Latin were taught. There is no practice so wasteful, and so destructive of standards, as that of spreading, what ought to be an elementary school over some nine or ten years, and introducing a lot of subject matter that the teaching force is unable to teach except at the sacrifice of the lower grades.

It would seem a reasonable procedure to establish a sane program of studies, suited to the needs of the pupils, and in

keeping with local conditions, with the view that it is to be more or less permanent. At least, it is not to be expected that the program will be radically changed each year. Unfortunately, among our schools there is no such stability in the program of studies.

CHANGING THE PROGRAM OF STUDIES Superintendents change frequently, and some superintendents seem to feel that they must renovate the program of studies in order to make a showing among their new patrons. The writer was talking with a newly elected superintendent who had never visited the locality in which he was to assume his duties, and who knew nothing of the local conditions. Yet, he had made out a new program of studies and had added botany and chemistry. When asked if there was sufficient teaching force and facilities for giving the work, he did not know, nor did he know whether there was a need for these particular sciences. Of course, this is an extreme case, but there are a number of schools in Texas in which programs of studies have been over-loaded by ambitious superintendents who failed to consider the factors involved in working out curricula for the high school. Not a few schools will have to drop some of their vocational subject matter because

the superintendents failed to consider the financial limitations of the community.

Programs of study should not conform to the whims of constantly changing administrative officers; and incoming superintendents would do well to study the situation carefully before making radical changes in the courses offered.

OVER-TAXING THE TEACHER.

All authoritative opinion as well as experience points to the conclusion that the average teacher cannot teach successfully seven or eight classes per day. The practice is too common, in Texas high schools, of assigning to the teacher some seven or eight classes and three or four subjects and expecting effective work. This is hoping for the impossible. No teacher, under such conditions, can do himself or his classes justice.

In the first place, few teachers, no matter how skillful, can teach any one of three subjects equally well. In the second place, it is necessary that the teacher make some preparation for each recitation. It is also insisted that the teacher shall take, from time to time, some written work from his classes. The written work must be graded and returned to the pupil, if it is to be of much value. If it be granted that the teacher, by extraordinary effort, is able to prepare his work and grade the requisite amount of written matter, an insurmountable difficulty remains. No teacher can teach from seven to eight classes, day by day, and throw the vitalizing enthusiasm into the class work that is necessary in successful teaching. The average teacher simply has not the physical and mental energy to sustain effort for so long a period of time. A number of the seven or eight classes will be taught in a mechanical, monotonous fashion that strongly tends to deaden the student's interest in the subject and in school work.

It is time that superintendents and boards realized the seriousness of the over-taxing practice. There are many of the smaller high schools that are working their teachers eight periods per day, and at the same time congratulating themselves on the fact that they have an excellent system of schools, and in some instances, on the fact that the town has accumulated a surplus

of school money. Such conditions represent educational decadence or stagnation instead of educational progress.

In most cases the people and the school board want efficient schools. In some cases, the people do not know the requisites of a good school. The live superintendent will be constantly engaged in educating his patrons to the needs of the school. His is the duty to point out that to accumulate a surplus school fund is to rob the present generation of children of their educational rights. He must see the obstacles and fearlessly and persistently point out the means whereby the school may be strengthened.

In contending that the teacher should have fewer classes, it is not the purpose to make the work easier for the teacher, but to secure better results to the pupil. More than six classes per day precludes anything like careful preparation for recitation, and is almost sure to reduce the written work required from classes below the minimum. The writer is convinced that the pupils of a great many high schools would secure greater returns for the time and energy devoted to their work if the superintendents would deliberately trim down their courses of study until they reduced the number of recitations per teacher to not more than six per day.

It is a mistaken notion that a school is failing in its purpose unless it offers a certain list of subjects to its pupils. Only so many subjects should be offered as can be well taught. There is nothing to be gained by grinding over an extended program of studies in a lifeless, dead level manner. In fact, it is such procedure that is making the school life of many pupils irksome and fruitless.

Of course, there are conditions that will affect the number of recitations that a teacher will be able to conduct per day. But, even when the classes are small and outside work is reduced to the minimum, the weight of authority insists that six class periods per day is the maximum that should be required of any teacher, if satisfactory instruction is to result.

It seems well to cite the opinion of boards of control, and of some educational experts on this question.

The University of Missouri in a Circular of Information on Accredited Schools, June, 1911, announces as one of the conditions for affiliation with that institution:

“No teacher should have more than six periods of teaching a day (a less number would be preferable), and, when any teacher has more than this number, the presumption is against the efficiency of the work.”

The foregoing rule applies to the small three-teacher high school as well as to the large high schools.

The Ohio State University states in its requirements for affiliation:

“No teacher should have more than six recitation divisions per day, or thirty per week. Twenty-five per week is recommended as a maximum.”

Bulletin No. 1 of the Board of Secondary School Relations issued by the Iowa State Board of Education states:

“The number of daily periods of class-room instruction given by any teacher should not exceed six.”

The Commission on Accredited Schools of the Southern States in its requirements for classification says:

“The number of daily periods of class-room instruction given by any teacher should not exceed five, and the Commission will scrutinize with extreme care any school in which the instructors teach as many as six periods per day.”

The North Central Association of Colleges and Secondary Schools, composed of colleges and high schools from seventeen States, has on its accredited list schools from the following States:

Colorado, Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, West Virginia, Wisconsin, Wyoming.

This organization represents a tremendous weight of authority in that nearly 900 high schools subscribe to its regulations.

This Association, in its report of March 21, 1913, declares:

“The number of daily periods of class-room instruction given by any teacher should not exceed five, each to extend over at least forty minutes in the clear. The Board of Inspectors will reject all schools having more than six recitation periods per day for any teacher.”

It must be remembered that the standards set by this Association are not restricted to a small, highly favored locality, or

to a few exceptional schools, but these standards are applied in seventeen States and to nearly 900 schools.

Dr. Sachs in his *The American Secondary School* states:

"A capable, vigorous teacher may be expected to teach a maximum of twenty hours per week; with the supplementary work incidental to his conduct of the classes, such as preparation of experiments, correction of papers, outlining of parallel readings and the work of an administrative character which forms part of every teacher's duties, this limit should not be exceeded; it is slightly below the average called for in European schools."

Dr. Sachs assumes that the teachers are well prepared:

"The mastery of the subject by the teacher must be such that the text book is simply one of several tools at his disposal; in *knowledge* of the subject matter he ought to be as near as possible the peer of the author, drawing upon as varied resources of information as the author has considered."

To make such an assumption as to the preparation of the average high-school teacher in Texas is to ignore the facts. Indeed, it is doubtful if such a standard of efficiency is approximated in more than three States in the Union. It is only in the European schools where there is a distinct profession and a permanent body of high-school teachers that this most desirable type of teacher is found.

The teachers in the French secondary schools give from two to four hours class instruction each day. In addition these teachers give considerable time to the supervision of the pupils during their study hours.

OVER-TAXING THE PUPILS.

A kindred evil to the over-taxing of teachers is that of over-taxing pupils. Perhaps the American youth cannot be said to be over-taxed, for it is very difficult to drive him sufficiently hard to overwork him, but he is often required to carry more subject matter than he can successfully master, and as a consequence he does superficial work. The American practice differs very greatly from the European in the number of subjects a pupil is expected to carry, and the number of recitations he is expected to recite per day. It is pretty generally conceded that, in our American secondary schools, students should be held to about twenty recitations per week.

It is no uncommon thing to find pupils in our Texas high schools reciting six lessons per day. It is a serious matter that many pupils are forming the habit of getting hazy, indefinite notions of subject matter; they get a slight temporary knowledge of many things but develop no power of thought. They fail to form the habit of sustained concentration. It is pitiable to behold the helplessness of such pupils when confronted with difficult problems or tasks which call for continued effort. It is doubtful if a high-school pupil can develop, through his school work, a more important power than the ability to persistently concentrate upon a particular subject until he has mastered the essentials of that subject. This is the kind of ability he must have to succeed at college or in business. It is the power to "stick at it" that gives a student confidence and prevents his being "stumped" by every difficult task that confronts him.

President Pritchett (Fifth Report, Carnegie Foundation, p. 64) complains that the high-school student gains a superficial knowledge of many subjects and learns none with thoroughness. He charges that the high-school graduates do not acquire either discipline or power.

The student who must prepare a large number of recitations must learn subject matter largely by rote, and has no time for thought. In fact, it would sometimes seem that the practice was devised for the purpose of preventing thought. The writer is satisfied that the school which requires only sixteen or seventeen units for graduation, and which gives four recitations per day for a large part of the time, and insists on strong work in the subjects carried, is providing the pupil with better preparation for future usefulness than the school which multiplies the recitations until it represents a mere cramming process.

For the majority of the pupils in the high school, this school represents the last formal training that they will receive. It seems better that the pupil should develop the power to study and the ability to master subject matter than that he should get a wide range of detached information. Notwithstanding much practice to the contrary, it is believed by the writer that a few things well done is of more value to the pupil than a great number of things poorly done. The power of initiation

is to be desired more than a patch work of information. The disciplinary value of a subject is often worth more than the facts; but a large part of the discipline is lost when the youth merely gets a smattering of the subject. The student, in so far as possible, should be afforded the opportunity of pursuing subjects congenial to him, but he should be held responsible for a grasp of those subjects. The pupil who recites a large part of the day is not likely to get this grasp.

It may be said finally that where it is necessary for the teachers to teach seven or eight periods per day in order that the pupil may have five recitations, it is the part of good judgment to reduce the pupil's recitations to four. This will enable the teachers to do efficient work and the pupils will be the gainers.

With teachers and pupils carrying a reasonable program and the teachers insisting upon strong work throughout the high school, there is no reason why the small schools should not do as efficient work within their scope as the large high schools. The pupils must not be given extravagant grades and must not be graduated until they have satisfactorily completed the high-school work.

The European practice differs decidedly from the American in the number of class periods the secondary pupil is to undertake per day. We must remember, however, that, as a rule, in the European schools, the pupil is not expected to make extensive preparation for the recitation. It is assumed that under competent instruction the pupil will learn the subject matter during recitation.

De Garmo, in his *Principles of Secondary Education*, states:

"Adjust education to the multiplication of studies on the one hand, and to the diversities of training demanded by modern society on the other. Germany has adopted two types of mixed courses of study or cultural education; one found in the Gymnasium and the other in the Realgymnasium. Other schools are provided which omit one or more of the last years from the full course. These courses are fixed by public authority and may not be changed except by the authority which made them. The aim of each of these schools is to give a well rounded education, the chief difference being one of emphasis, since about the only difference in studies is that English may be substituted for Greek in all the schools of the *Real* type.

"One of the chief defects of this inelastic system is that in

the attempt to get all types of studies into the curriculum and to give each study the amount of time necessary for good results, the student is overworked to such an extent that his sight is usually impaired, and not infrequently his health also. The number of fifty or fifty-five minute periods, even for six-year-old boys range from 30 to 33 (per week)."

In the French secondary schools, we find pupils in the lowest, or sixth form, reciting 22 and 23 hours a week, while in the highest, or first form, pupils recite as many as 27 hours per week.*

Note: Farrington's "French Secondary Schools."

In order that the information gained from visiting Texas schools might be supplemented, a set of questions was sent out to the smaller schools. These questions were framed so as to secure information as to:

1. The number of teachers exclusive of the superintendent employed in the high school.
2. The average number of classes taught by each high-school teacher per day (the superintendent not included).
3. Whether, in the opinion of the superintendent, the high-school teachers were so over-taxed as to seriously diminish their efficiency.
4. The number of recitations required of high-school pupils per day.
5. What, in the opinion of the superintendent, should be the maximum number of recitations per day required of high-school pupils?

There were some other questions which do not bear upon the problem of over-taxing teacher and pupil, and, hence, they will not be considered.

Since, in the small schools, the over-taxing of pupils usually results in over-working the teachers, the replies to the questions, though involving two matters, will be given together.

Replies were received from 143 schools which employed from two to five teachers (exclusive of the superintendent) in the high school. This list of schools is taken as a basis for consideration on the ground that each one of them has, with the aid of the superintendent, sufficient teaching force to do standard high-school work, provided too much subject matter is not undertaken. Of course, the assumptions are that the schools all run the stand-

ard length of time, and that the teachers are competent to teach their subjects. It is realized that, in many cases, those assumptions are not warranted; but there are a number of cases in which the assumptions are valid. Many of the 143 schools can do a better grade of work than they are now doing, if they can be persuaded to limit the subject matter given and the number of recitations required.

It was found that in 18 of the 143 schools the teachers conducted 5 classes each per day; in 48 schools the teachers conducted 6 classes each per day; in 44 schools the teachers conducted 7 classes each per day; in 25 schools the teachers conducted 8 classes each per day; in 8 schools the teachers conducted 9 or more classes each per day.

In 77 of the 143 schools the teachers undertake too many recitations. In more than 50 per cent of the schools under consideration, the teachers conduct 7 or more recitations each per day. According to all reliable authority, the teacher can not do efficiently this amount of class work. In many instances this over-taxing of the teacher results from a program of studies unsuited to conditions, and poorly administered,—there is no real necessity for overburdening the teacher. It was found that 55 of the superintendents reporting were of the opinion that their teachers were teaching too many classes to secure the best results. It was rather astonishing to find that 19 superintendents of schools, in which the teachers were conducting from 7 to 10 recitations per day, were of the opinion that their teachers were not over-taxed.

From Standpoint of Pupil.—It was found that in 38 of the 143 schools under consideration the pupils recite 4 times per day; in 90 schools the pupils recite 5 times per day; in 15 schools the pupils recite 6 or more times per day. It was found that in 61 schools in which the pupils recite 5 or more times per day, the teachers were carrying 7 or more recitations per day.

Of the superintendents of the 143 schools 90 were of the opinion that not more than 5 recitations per day should be required of high-school pupils; 43 superintendents favored 4 recitations per day; a very few superintendents believed that pupils should be permitted to carry more than 5 recitations per day.

In the 61 schools in which the reports show the teachers to be over-taxed it would seem to be both feasible and logical to reduce

the recitations of the pupil to four per day. There are many eases in which the solution of the problem of over-worked teachers is simple.

Crowded programs of study are often the result of the training of the makers. Many of the teachers and superintendents in the small schools were educated in our state normal schools, where, in the past, they were required to carry from ten to fourteen subjects at a time. These same teachers received their preliminary experience, in many instances, in the country schools, where they were expected to teach everything from primary work to solid geometry. Naturally they became accustomed to the plan of giving a multiplicity of subjects. Another factor that has promoted over expansion of the program is the tendency of the community to determine the standing and measure the efficiency of the school by the number of high-sounding subjects taught.

The following letter was sent to the superintendents in a number of the larger towns in Texas:

“DEAR SIR: I am attempting to find out how many of the stronger high schools in Texas require their students to carry four subjects at a time and complete sixteen units for graduation. Will you state what is required in your school?”

It was not attempted to get this information from all the schools, but merely to get some indications of the practice in our own State. The following table and notes show the results of the investigation.

Name of School.	No. Subjects Carried	Units required for Graduation.
Ball High School (Galveston).....	4	16
Fort Worth High School.....	4	16
Houston High School.....	5	16
Hillsboro High School.....	4	16
Cleburne High School.....	4	16
Marshall High School.....	4	16
Wichita Falls High School.....	4	16
Waco High School.....	4	16
Gainesville High School.....	4½	15
Marlin High School.....	4 and 5	18
Temple High School.....	4 and 5	18
Amarillo High School.....	4 and 5	18
Bonham High School.....	5	19

Name of School.	No. Subjects Carried.	Units Required for Graduation.
*Dallas High School.....	5	20
Austin High School.....	4 and 5	18
Brownwood High School.....	4	16
San Marcos High School.....	4	16
Corsicana High School.....	4	16
Winnsboro High School.....	4	16
Loekhart High School.....	4	16

The Amarillo High School required 18 units for graduation. Strong students carry five subjects per year for two years, and four subjects per year for two years.

While the Bonham school requires 19 units for graduation, four of these 19 units may be industrial courses in the departments of manual training, mechanical drawing, domestic economy, or agriculture. Some vocational work is required of each pupil.

The Houston High School requires 16 units for graduation, and the pupils recite 20 times per week. However, pupils carry five subjects at a time. Pupils only recite four times per week in history and in English, while certain science and vocational courses come only three times per week. The Houston High School follows substantially the program of studies recommended by the Committee of Ten.

The Superintendent of the Marshall Public Schools States:

"The Marshall High School requires pupils to carry four courses at a time and to complete 16 units for graduation. In two instances, pupils have done the 16 units in three years by taking work in the summer, but this is very unusual. A larger number takes longer than four years for graduating."

Though the Temple High School requires 18 units for graduation, a review in algebra and arithmetic may be counted as one unit.

A few of the large city high schools in other States taken at random show as follows:

Springfield (Mass.) High School requires a minimum of 15 prepared recitations per week.

The St. Louis High School requires from 20 to 33 periods per

*Recently changed to 16 units for graduation.

week of the pupil, depending upon the year and the curriculum chosen. The manual training curriculum requires 33 periods per week the last two years. It should be remembered that much of the work in this curriculum is unprepared. On the average, about 20 periods per week of prepared work is required.

The New York High Schools require not more than 21 periods per week of prepared work.

It will, perhaps, be worth while to cite a few instances in which boards of control and other administrative bodies have passed on the question of the number of recitation periods per day that should be required of the high-school pupil.

The Louisiana State Course of Study, prepared in 1912 by the State Inspector of High Schools, states:

“The average student in the high school has as much as he can do to properly pursue a course comprising four subjects at one time, and students should be discouraged from attempting, if not actually forbidden, to take more than four units each school session, unless the additional credits made are in recreational subjects requiring manual activity and no home preparation.”

In order to discourage “scrappy” courses, this same bulletin recommends that there should be required for graduation from the high school three majors, two minors, and one additional unit. A major means a subject carried for three years, or through three units. A minor means a subject carried for two years, or through two units. It is thus that the Louisiana school authorities hope to develop ideals of thoroughness.

The Iowa State Board of Education, in the Bulletin of Accredited Schools, 1912, states that the high schools of Iowa, seeking to be placed on the accredited list shall require of each pupil not more than *four* recitations daily. It is suggested that exceptional pupils might be permitted, under certain conditions, to carry five subjects.

The Manual of the Free High Schools of Wisconsin, issued by the State Superintendent in 1910, provides for four units per year, per student, and prescribes 16 units for graduation in the four-year high school.

The Commission on Accredited Schools of the Southern States in its requirements for classification, issued in 1913, says:

“No school shall be accredited which does not require for graduation the completion of a four-year high-school course of study.”

embracing fourteen units, as defined by this Association. A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. *More than twenty periods per week should be discouraged.*"

The North Central Association of Colleges and Secondary Schools is composed of colleges and high schools from 17 States. This Association has on its accredited list nearly 900 secondary schools. In the report issued by the North Central Association, March 21, 1913, it is stated:

"No school shall be accredited which does not require fifteen units, as defined by the Association, for graduation. *More than twenty periods per week should be discouraged.*"

The last sentence in the above quotation indicates that the average of four recitations per day for the pupil is the practice preferred.

In the Report of the Committee on College Entrance Requirements, page 30, it is recommended that no high-school student carry more than four regular studies which occur four periods per week.

While it may be insisted that the number of studies a pupil should carry, and the number of recitations that should be required of him per day, or per week presents an unsolved educational problem, yet the American practice clearly inclines to the four-subject, four-recitation plan. The evidence which has been cited may seem rather meagre; but it must be remembered that it is authoritative and that large groups of schools follow the recommendations of the various associations. It has been pointed out that many of the larger high schools in Texas seem to favor the four-recitation per day plan.

THE SMALL HIGH SCHOOL.

There are many small high schools in Texas that could, with their present expenditure, secure better results than they are now realizing. If the authorities of these schools would carefully consider the situation and apply the remedy that will become evident after a study of the conditions, there is no reason why a considerable number of these small schools might not eliminate lost motion and become decidedly more efficient with no increase in expenditure.

The tendency has been for the small school to increase its force of poorly paid teachers and add inadequate science equipment as the funds increased, instead of increasing salaries to the point that would enable it to command the services of competent teachers. Buildings, libraries and science equipment as well as a richer program of studies are things to be desired, but the most vital and indispensable factor in any school is efficient teachers.

The educational possibilities of the small school are usually much restricted by financial limitations. It is impossible to offer numerous electives. It seems to the writer that the best returns would be guaranteed by offering a few subjects and employing competent teachers to teach them. By adhering to this practice, the small schools would be able to pay, in many cases, as much per teacher as the larger cities, thus insuring good teaching. Such schools with their small numbers of pupils, present, in many respects, more favorable conditions for strong work than the large high schools. There ought to be a great number of excellent small high schools in Texas.

The small school that has been employing two teachers at \$60 each per month adds two more \$60 teachers and is surprised that the standard of work is not raised. In fact, it often happens that the *law of diminishing returns* sets in, and the results are not as good as when only two teachers were employed. With increase in the size of the school, the incompetent teacher is likely to prove less efficient. The remedy is simple. If the financial limit has been reached, reduce the subject matter offered and employ fewer, but more competent teachers.

Communities sometimes strain themselves financially in order to build a good school building, and then retrench on teachers' salaries to make up for their extravagance. Such a policy is wasteful and unwise. A building will not yield educational results, while competent teachers will get results under the most unfavorable material conditions. If buildings cannot be constructed except at the expense of efficient teaching it would be better not to build.

The difference in the efficiency of an \$80 teacher and a \$60 teacher is out of all proportion to the difference in salary. In fact, it is likely to be the difference between a totally incompetent

and a competent teacher. One does not employ a doctor because he is cheap; we fear the cheap doctor, and feel safer with no doctor at all than we would feel in the hands of the untrained inexperienced physician. We believe that we gain in the end by employing the high-priced specialist to treat us when we are ill. We would rather have the expert diagnose our case and outline the treatment even though he made us only one visit, than to have a quack visit us every day.

There are cases in Texas where four high-school teachers are employed at an average salary of \$60 per month. Well prepared teachers cannot be secured for this salary. It is highly probable that better results would be secured if the program of studies in such cases were trimmed down so that three teachers, carrying six classes each, might do the work. Then the community would be able to pay \$80 per month, and would be able to secure fairly competent teachers.

Is it not reasonable to insist that the youth who receives strong efficient teaching three or four times per day is much better off than the youth who receives incompetent, slipshod instruction five or six times per day? Merely seating students in a row, opening a book, and asking questions is not a real recitation, but it is the kind that the untrained over-taxed teacher must hold.

The small town that is able to employ four high-school teachers will sometimes invest some \$30,000 in a high-school building and equipment. This represents an investment that calls for \$2400 a year interest. The educational returns from this investment are often seriously reduced because of the employment of cheap teachers. In many cases an additional outlay of some \$400 per year in the form of salaries for the high-school force would enable the school plant to yield a large educational dividend. In no other line of business would men tolerate a policy that saved \$400 a year in wages and thereby nullified a \$30,000 investment.

Another wasteful procedure that is rather common in the small high schools is that of introducing sciences and employing a teacher at \$90 or \$100 per month, to teach them with little or no laboratory equipment. It is a useless extravagance to have a high-priced teacher squander his time teaching science with no equipment or with so little equipment that he must divide a small class into a large number of sections in order to give the pupils

laboratory practice. One would not think of employing an expert cabinet maker at \$5 per day and then furnishing him a buck-saw with which to work. The community pays a high price for teaching efficiency and practically loses the service for lack of tools with which to labor. It would be better to undertake no science than to introduce it under such conditions.

GENERAL COURSE SCHEMES.

Keeping in mind accepted principles and the conclusions deduced from the foregoing discussions, course schemes and type programs may be presented.

English.

English should be offered five times per week, in each year of the high school.

History.

1st year:	Ancient History.....	5P
2nd year:	Mediaeval History.....	5P
3rd year:	English History.....	5P
4th year:	American History and Civics.....	5P

This history order is suggested when four units of history are offered. The three or four-teacher high school will often find it best to omit one or two of the history units. If only two units of history are offered, the writer favors Ancient History and American History with civics. English History should probably be the last unit introduced. If the first-year pupils are heavily loaded with subject matter and only three history units are offered, it will be well to offer no history in the first year. Indeed, a science or manual training course is better suited to the needs, capacities, and interests of pupils who are just entering the high school than is Ancient History.

There is considerable argument for introducing elementary English History in the first year. It is contended that Ancient History is too hard for first-year pupils. The writer believes that, if the Ancient East is given little attention and the institutional side of Greek and Roman History is not over emphasized, the first-year pupil will be able to master the rather simple narrative of the Greek and Roman periods of Ancient History. In

fact, the high-school graduate seems to carry away from his study of history more information from the ancient period than from any other period except the history of his own country. There are good reasons why the study of English History should be postponed until the third year. At that time, the pupil is sufficiently mature and has mastered enough of the historical background to comprehend the evolution of English institutions. A grasp of the institutional phase of English History is a very desirable preparation for the study of American History in the fourth year.

It is suggested that no less than two and no more than three units of history be prescribed.

Mathematics.

1st year:	Algebra to quadratics.....	5P
2nd year:	Algebra finished.....	5P
3rd year:	Plane Geometry.....	5P
4th year:	Solid Geometry and Trigonometry..	5P
or		
Solid Geometry and review.....		5P

Only algebra and plane geometry should be prescribed, and the school with a small teaching force might omit both solid geometry and trigonometry.

It is recommended by good authority that plane geometry should be offered in the second year, or should follow as soon as the pupil has reached quadratics in his algebra. The common practice in Texas is, however, for the pupil to finish algebra before taking up plane geometry. Some high-school teachers alternate the plane geometry with algebra in the second year.

As a rule, mathematics gets an undue proportion of the time in our high schools. It is evident that much time is wasted in solving arithmetical puzzles and learning rules for obsolete procedures. If the child could be led to make much use of algebraic principles in the solution of many problems in arithmetic, he would learn as much arithmetic as at present and would, at the same time, come to appreciate the utility of algebra in the solution of practical problems. It would seem that the pupil in his study of algebra and geometry, should get enough practice in the fundamental arithmetic operations to preclude the necessity of

devoting a year to monotonously plodding over the same field that he has covered in the grammar school. A brief review and, at the same time, a new view of arithmetic may be offered to advantage the latter part of the fourth year.

FOREIGN LANGUAGE.

If Latin is offered, it should begin in the first year and run for four years. If a modern language is offered, it may begin in either the first, second, or third year; but, at whatever point the pupil may begin a modern language, he should carry it on to graduation.

Science.

1st year:	Physiography and Physiology	...5P+
2nd year:	Biology, Botany, or Zoology	...5P+
3rd year:	Chemistry5P+
4th year:	Physics5P+

Of course, botany, zoology, or biology might be given in the first year.

*Note: Four recitations and one double laboratory period per week should be assigned to physiography and physiology. Three recitations and two double laboratory periods should be assigned to the other sciences.

*Agriculture.**

1st year:	Agriculture5P+
2nd year:	Agriculture5P+
3rd year:	Agriculture5P+
4th year:	Agriculture5P+

MANUAL ARTS.*

Three double periods per week for four years, or five double periods per week for two years will furnish sufficient training in the manual arts for most high-school groups.

Manual Training.

1st year	—3 to 5 double periods.
2nd year	—3 to 5 double periods.
3rd year	—3 to 5 double periods.
4th year	—3 to 5 double periods.

DOMESTIC ECONOMY.

1st year—3 to 5 double periods.
 2nd year—3 to 5 double periods.
 3rd year—3 to 5 double periods.
 4th year—3 to 5 double periods.

Conditions may make it necessary for a school to reduce the amount of time devoted to the manual arts. Pupils may derive much good from the study of the manual arts even though no more than a total of five double periods be assigned to them.

*Note: The University will furnish, on request, bulletins which outline the manual arts courses and agriculture courses in detail.

TYPE PROGRAMS OF STUDIES.

Two competent teachers will be able to do successfully three years of high-school work.

A THREE-YEAR PROGRAM OF STUDIES FOR
TWO TEACHERS.

I.

<i>English</i>	5P
<i>Algebra</i>	5P
Foreign language or a...	
science	5P+
Ancient History.....	5P

II.

<i>English</i>	5P
<i>Algebra</i>	5P
Foreign language or ...	
a science.....	5P+
Mediaeval-Modern	
History	5P

III.

<i>English</i>	5P
<i>Plane Geometry</i>	5P
Foreign language or a science.....	5P+
American History and Civics.....	5P

Note: The subjects in italics are *prescribed*.

It will be noted that this program provides for no electives, and that the pupils are offered only four subjects at a time. There will be a total of twelve recitations per day which is the maximum for two teachers, if the teaching is to be efficient. Of course, both the science and the foreign language might be

given in order that the pupils might have the option of taking either the language or the science. In that event, there would be fifteen recitations per day besides the additional time that must be devoted to laboratory practice. This will be more class work than the two teachers can do well, and the pupils will gain little or nothing from the expansion of the program.

It is largely wasted effort for two teachers to undertake four years of high-school work. Two teachers cannot do successfully sixteen recitations per day. As has been pointed out, three years of work well done is more advantageous to the pupil than four years poorly done.

In the foregoing program, should science be offered in place of the foreign language, the school should provide adequate laboratory facilities, as it is a decided waste of time to carry pupils through three years of formal text-book science without laboratory practice.

It will be evident that a commercial course, an agriculture course, or a manual arts course may be substituted for the science or the foreign language course. The following scheme will indicate some of the possibilities of arrangement:

I.

Physiography and Physiology, Botany, Biology, Agriculture, Manual Training, or Domestic Economy.

II.

Botany, Zoology, Agriculture, Manual Training, Domestic Economy, or Commercial Arithmetic and Book-keeping.

In case biology is given in the first year, it will be well to offer neither the botany nor the zoology in the second year.

III.

Agriculture, physics, chemistry, manual training, domestic economy, or stenography and type-writing.

Note: The sciences will require three or four recitations and one or two double laboratory periods each per week. The manual arts should have two or three double periods per week.

If pupils enter the high school poorly prepared, it may be necessary to acknowledge their weakness by giving them some course in elementary history. As has been pointed out, the writer

believes that pupils well prepared for the high school will be able to make reasonable progress in Ancient History, provided the essential phases of that subject are properly presented. If the pupils must carry over into the high school unfinished subjects from the elementary school, it may be necessary to offer no history at all in the first year of the high school. Should Ancient History not be given in the first year, it is probably advisable to give General History in the second year and follow it by American History and civics in the third year in the three-year high school.

The tendency in some of the small high schools is to spread out the mathematics. Often arithmetic is given throughout the first year and a part of the second, while algebra is carried for three years. Such an arrangement indicates either a low standard of work or else that mathematics is over-stressed, and, hence, that other worthy subjects do not receive their due proportion of time.

THREE-TEACHER HIGH SCHOOL.

Three well trained teachers will be able to do four years of high-school work and do it well. If the pupils carry four subjects per year, there will be a total of sixteen recitations per day with perhaps some extra periods for laboratory. In this case, the superintendent might carry four recitations per day and the other teachers six each. If the first year class must be divided, or if the teaching force undertakes to carry an alternative curriculum, the number of recitations will be increased to at least twenty per day and a high standard of work cannot be expected.

It will be noticed that the programs suggested are made on the assumption that pupils will carry only four subjects at a time. Such a limitation on the number of subjects that the pupil is to undertake seems especially desirable for the high school that is unable to employ an adequate teaching force.

A FOUR-YEAR PROGRAM OF STUDIES FOR A THREE-TEACHER HIGH SCHOOL.

I.	II.
<i>English</i> 5P	<i>English</i> 5P
<i>Algebra</i> 5P	<i>Algebra</i> 5P
Foreign language or... science 5P+	Foreign language or... science 5P+
Ancient History 5P	Mediaeval-Modern History 5P
III.	IV.
<i>English</i> 5P	<i>English</i> 5P
<i>Plane Geometry</i> 5P	Foreign language or....
Foreign language or science 5P+	science 5P
English History or science 5P	American History and civies 5P
	Solid Geometry and Trigonometry, or review, or.....
	A science 5P+

In the above program of studies, the history courses are not marked as *prescribed*, but, at least two units of history should be taken by every pupil who goes to graduation. It is believed by the writer that one of the history units should be American History and civies.

Should Latin be the foreign language offered, it would be well for the pupil to carry the subject for the full four years. It is doubtful whether he will be able to realize the greatest returns on the time and energy devoted to the study of Latin unless he pursues the study of the subject for four years. If the foreign language offered is other than Latin, it may be begun in the first, second, or third year. It should be carried, however, from the time it is begun until graduation. If the foreign language is carried for only two or three years, the way is opened for the introduction of science in the first, and possibly the second year of the high school. As has been pointed out, the school should be equipped for science before science subjects are introduced.

In case Ancient History is offered in the first year, a unit of science might be offered in the place of English History in the third year.

It is perhaps possible, by alternating certain subjects, for three teachers to offer an alternative in each of the four years of the high school. It must be recognized, however, that such a plan is a make-shift and that it unmistakably indicates that the school is not up to standard. Certainly, the presumption is that each year of study in the high school increases the pupil's capacity for mastering subject matter. Pupils who have had three years of training should be able to do a more vigorous character of work than pupils who have had only two years of training. This should be especially true in subjects that are sequentially developed, as English or history. Our whole system of classification is based on this assumption. The fundamental objection to such a plan of procedure is that it necessitates the throwing into one class for the purpose of instruction, two groups of pupils who are a year apart in preparation. It requires a teacher of unusual skill to so instruct such a class as to keep both groups working to capacity and prevent a decided deterioration in standards of achievement. The writer is so doubtful as to the wisdom of the alternation plan that he hesitates to suggest it as a possibility.

In order to operate the plan at all, the first-year class must be small enough to be carried in one section, and the third and fourth-year classes must be small enough to be combined for recitation.

A PROGRAM OF STUDIES FOR A THREE-TEACHER
HIGH SCHOOL, PROVIDING FOR THE ALTERNA-
TION OF SUBJECTS IN ORDER TO INTRO-
DUCE AN ELECTIVE.

I.

<i>English</i>	5P	<i>English</i>	5P
<i>Algebra</i>	5P	<i>Algebra</i>	5P
Foreign language	5P	Foreign language	5P
Ancient History	5P	Mediæval History	5P
Science	5P+	Science	5P+

III. *Combined.* IV.

<i>English</i>	5P		
<i>American History</i>	5P	Even years	
<i>Physics</i>	5P+	Odd years	
		Solid Geometry	Trigonometry or review
<i>Plane Geometry</i>	5P		5P
Foreign language	5P	Foreign language	5P
<i>Chemistry</i>	5P+	Even years	
<i>Botany</i> or <i>Agriculture</i>	5P+	Odd years	

It will be observed that the foregoing program provides for seventeen recitations per day besides the additional time required for laboratory practice. The teachers must carry approximately seven recitations each per day, and they will find themselves taxed to the limit. The versatility, resourcefulness, and training necessary to enable a teacher to conduct successfully so many recitations in such a variety of subjects calls for a degree of ability that will be rarely found in the three-teacher high school.

Should the first and the second year classes be small enough to combine, such subjects as botany and zoology may be alternated.

With regard to the third and fourth year English classes, it is feasible to combine these classes for literature. The history of English literature with a list of classics may be given to the group one year, and the history of American literature with a list of classics may be offered the next. The third year class will

be able to derive considerable profit from the study of the classics that are ordinarily assigned to the fourth year class. It will require discretion to select a list of classics best suited to the group of students. It will probably be advisable to separate the classes once a week for composition. Because of the sequential nature of composition, the fourth year class will do a different type of work.

Provided the section is not too large, it will be possible to present physics, chemistry, botany, or agriculture to both classes at the same time.

American history and civics may be given on alternate years to the group without serious loss to either class.

It is well to caution schools that make use of this plan of alternating subjects that there must be some permanency in the teaching force. The small school that changes teachers each year cannot successfully operate the plan. The teachers must be familiar with the needs of the various classes in order to succeed with the plan. Even with a more or less permanent body of teachers, the scheme has its defects, as has been pointed out. But it is possible that, where conditions force the introduction of an alternative curriculum, these defects are counterbalanced by the gain in teaching efficiency due to the reduction of the number of daily class periods. The writer is of the opinion, however, that the better plan is to eliminate the alternative curriculum.

When a high school is able to employ four teachers, the making of a program of studies in accordance with fundamental principles becomes much simpler. The problem is to select suitable, parallel, elective courses and at the same time not multiply the number of recitations to the point of over-taxing the teachers.

A PROGRAM OF STUDIES FOR A FOUR-TEACHER HIGH SCHOOL.

I.	III.
<i>English</i> 5P	<i>English</i> 5P
<i>Algebra</i> 5P	<i>Plane Geometry</i> 5P
*Foreign language 5P	Foreign language 5P
Ancient History 5P	Chemistry 5P+
**Science 5P+	English History or science 5P+
II.	IV.
<i>English</i> 5P	<i>English</i> 5P
<i>Algebra</i> 5P	Solid Geometry and Trig- onometry or review... 5P
Foreign language 5P	Foreign language 5P
Mediaeval-Modern His- tory 5P	American History and civics 5P
Science 5P+	Science 5P+

1*Note: The manual arts or vocational subjects may be substituted for the sciences or the foreign language.

2*Note: Pupils have the option of the science or foreign language.

The preceding program is subject to many modifications, but the contention is that it is sound in principle. It is the belief of the writer that all high school graduates should have done four years of English. It is generally conceded that the high school should require of the pupils who go on to graduation two units of history, algebra, and plane geometry. As has been stated before, if the foreign language is Latin, pupils electing it should study it for four years. If the elective offered is a modern language, the pupil may carry it for only the last two or three years of the high school. In that case, he would have the opportunity of pursuing other subjects prior to taking up the foreign language. It is desirable that all pupils have a good, solid year of science with laboratory practice. The language pupils might take science in the third year in the place of English History.

The four-teacher program provides for twenty recitations per day, plus laboratory periods. The sciences, instead of requir-

ing five periods each week, will require three or four recitation periods each, plus one or two double laboratory periods. The total will be six or seven periods per week. Should the first-year class be so large as to necessitate two sections, or should the attempt be made to provide an elective for pupils who carry five subjects at a time, the number of class periods would be so increased as to reduce the efficiency of the school.

As the number of high-school teachers increases beyond four, the problem is to introduce appropriate additional subjects and provide competent teachers and adequate equipment for properly presenting the new subjects. Every high-school course should require, on the part of the pupil taking it, a reasonable amount of effort. There is nothing so destructive of school standards and so productive of habits of indolence among pupils as "crip" courses. There should be no "snap" in a good school.

As the program of studies is enriched by the addition of new subjects, the pupil must be wisely directed in the choice of electives. If too much freedom of choice is allowed the pupil, there is a danger that he may pick out a patch-work curriculum that will largely fail to prepare him for his future activities. To guard against this haphazard selection of courses, many of the larger high schools arrange the courses in groups or curricula, and the pupil is allowed the privilege of selecting the curriculum that he will pursue. Another plan that insures continuity of effort in some of the courses elected is that of requiring a major and two minors in other subjects than those prescribed. To complete a major, the pupil must do at least three units in a subject, and to complete a minor, the pupil must do at least two units in a subject.

It is generally conceded that some provision must be made to protect the pupil against a wasteful scattering of his efforts when there is offered an extensive list of electives. Perhaps, the best plan is for the pupil to select his electives under the direction of competent advisers. The principal, or a committee of teachers in co-operation with the parents, should be able to direct the pupil into fields of work that are in harmony with his interests and aptitudes, and that will yield the training best suited to his future needs.

A GOOD PROGRAM OF STUDIES FOR A FIVE-TEACHER HIGH SCHOOL.

I.

<i>English</i>	5P
<i>Ancient History</i>	5P
<i>Algebra</i>	5P
Foreign language	5P
Physical Geography	5P+
Manual Arts { <i>Domestic Economy</i> and <i>Manual Training</i> }	4 double periods each

Note: The subjects in italics are prescribed. Seventeen units are required for graduation. The pupils who do not take the foreign language will take all the other subjects offered in the first year, and will complete 4 2/5 units. The pupils who take the foreign language will take either the science or the manual arts. (Of course, it is understood that the girls will take the domestic economy and the boys the manual training.)

II.

<i>English</i>	5P
<i>Algebra</i>	5P
<i>Mediaeval-Modern History</i>	5P
Foreign language	5P
Physiology	5P+
Manual Arts { <i>Domestic Economy</i> and <i>Manual Training</i> }	3 double periods each

Note: The pupils who do not take the foreign language will take all the other subject matter offered in this year. The foreign language pupils will take either the science or the manual arts.

III.

<i>English</i>	5P
<i>Plane Geometry</i>	5P
<i>English History</i>	5P
Chemistry	5P+
Foreign Language	5P
Manual Arts { <i>Domestic Economy</i> and <i>Manual Training</i> }	3 double periods each

Note: The pupils who do not take the foreign language will take all the other subjects offered in this year. The pupils taking the foreign language will elect the chemistry or the English History, and may also take the manual arts.

IV.

<i>English</i>	5P
<i>American History and Civics</i>	5P
<i>Mathematics and review</i>	5P
Foreign language	5P
Physics	5P+

Note: The language pupils may omit the review in this year. The pupils who do not take the language will take all the other work offered. The pupils who do not carry the foreign language will get through the high school with 17 1/5 units. The pupils who take the foreign language may finish with more credits.

This program offers little choice to the pupils, but it must be remembered that the teaching force is not large enough to carry many electives. The non-language pupils will get considerable training in the manual arts and science, while the language pupils will be offered the opportunity to do some science and some work in the manual arts. The pupils will not be seriously over-taxed and the program is easy to administer.

A PROGRAM OF STUDIES PROVIDING NO ALTERNATIVES OR ELECTIVES.

I.

English	5P
Algebra	5P
Latin	5P
Ancient History	5P
Physiology	3P+

Total, 4 3/5 units.

II.

English	5P
Algebra	5P
Latin	5P
Mediæval-Modern History	5P
Manual Training..	3 double P

Domestic Economy..3 double P

Total, 4 3/5 units.

III.

English	5P
Plane Geometry	5P
Latin	5P
Chemistry	5P+
Manual Training..	3 double P

Domestic Economy 3 double P

Total, 4 3/5 units.

IV.

English	5P
American History and	
civics	5P
Latin	5P
Physics	5P+
Manual Training..	3 double P

Domestic Economy..3 double P

Total, 4 3/5 units.

The foregoing program will call for some twenty-four recitation periods per day, and will necessitate, for successful operation, four teachers. Girls will take domestic economy and the boys the manual training. The program offers 18 2/5 units, which is more than should be required for graduation. A science course, a commercial course, or a modern language might be substituted for the Latin. The time assigned to the manual arts might be reduced, or some other course might be offered instead. The manual arts were incorporated into the program for the purpose of indicating a flexible arrangement of manual training and domestic economy. The writer realizes the difficulty that would be met in securing a competent teaching force for administering such a program of studies.

REORGANIZATION OF THE PROGRAM OF STUDIES IN THE LARGER HIGH SCHOOLS

The type programs of studies that have been presented on the preceding pages of this bulletin have conformed, in most particulars, to the traditional, academic organization of high-school curricula. The principles of flexibility and variety of subject matter have been largely ignored. The limitations under which the small, three or four-teacher high school must operate practically precludes flexibility or variety in the program of studies. However, as the number of pupils and teachers, in any particular high school, increases the problem of organizing a program of studies that will best meet the needs of the pupils and the community presents many perplexing difficulties. It seems advisable to, at least, suggest the possible direction which the solution of the problem may take.

Professor Calvin O. Davis in his *High-School Course of Study* states:

"As a rule, the high schools of today seek: (1) to prepare for college or university such students as look forward to a college education; (2) to give a broad general culture to those students whose social or economic future enables them to defer the choice of a vocation until after completing the high-school course, but who, nevertheless, have no desire or intention of continuing their education in college; and (3) to give a practical training, in special subjects, to those students who must secure systematic vocational training (if at all) during the one, two, three, or four years immediately following the completion of the elementary school course. In a very true sense, therefore, the three-fold aims of the high school may be said to be college preparation, general culture, and vocational or practical training."

Professor Davis is of the opinion that a high-school curriculum should be so organized as to give to the individual pupil a vision of the great departments of human knowledge and attainment, and enable him to test his aptitudes and capacities in the various fields; further, it is the business of the high school, in so far as it is possible, to develop to the fullest the talents discovered in the pupil.

A very large per cent of the pupils enrolled in our schools drops out between the sixth grade and graduation. Any program of studies that is organized without taking into consideration this great body of pupils that, under present conditions, is eliminated from our schools is bound to be open to criticism. Curricula that can be carried to fruition by the end of the ninth grade should be provided for those pupils who, for any cause whatever, leave the school before graduation. Something in the nature of a "short course" is the thing that seems to be needed. It cannot be deemed a rational procedure to offer the same subjects in the same quantities, and by the same methods, to children who are to pursue their studies for only one or two years as to those who continue their course for four years. To load each pupil who enters the first year of the high-school with algebra, Ancient History, and a foreign language seems an illogical, unwise, and destructive policy. It almost seems as though the school had unconsciously adopted a most successful plan of eliminating pupils. The school that is large enough to have several sections of each class cannot afford to so ignore the needs of its pupils and the community as to adopt such a mechanical rule-of-thumb procedure.

Professor Homer W. Josselyn, in a chapter in the *Modern High School*, recommends that the seventh, eighth, and ninth grades be organized into, what he calls, "an intermediate department." He believes that such a plan will bridge the gap between the elementary school and the high school, and that it will result in a much larger per cent of the pupils being retained in the high school until the completion of the ninth grade.

Professor Josselyn suggests seven different curricula that may be provided for the various groups of pupils under his plan of organization. For our purpose, it will only be necessary to consider three types of curricula. (1) The traditional academic group of subjects is offered from the eighth grade to graduation. The completion of this curriculum prepares for college. (2) Beginning with the seventh grade and extending through the ninth, instruction of a general nature is given, but no vocational subject matter is offered. The ancient languages and mathematics, in the traditional form, are omitted. The emphasis is placed on the social sciences, elementary science,

literature, and the manual arts. The aim is to keep the children in school, at least, through the ninth grade, and to give them a general view of the world of knowledge and some little practical skill. (3) The third curriculum provides for industrial training in, the so-called, "intermediate school," so that by the end of the ninth grade, pupils have had the opportunity to learn the elements of wage-earning occupations and, at the same time, have been offered general cultural courses so that they may acquire some breadth of view and some training for leisure.

The other curricula suggested by Professor Josselyn are largely modifications of the three considered. It is provided that general, commercial, and industrial subjects may be offered in varying quantities.

It seems especially desirable that the large high schools should provide at least three types of curricula,—the academic, the general, and the vocational. These curricula should be sufficiently flexible so that up to the tenth grade, pupils may pass from one to the other without serious loss. It may happen that pupils who were sure that they would leave school at the end of the ninth grade find that they are able, and desire to continue their work. It should be possible for such pupils to take the academic curriculum, and get ready for college, or pass from the general to the vocational, or from the vocational to the general curriculum, and continue to graduation.

That school administrators are alive to the need for a reorganization of high-school programs of studies so as to provide for the "short time" pupils is manifest. Kansas City, Pittsburg, Los Angeles, and Chicago have in operation two-year curricula. Chicago offers ten distinct two-year curricula. Los Angeles offers more than fifty vocational subjects.

The great difficulty confronting schools that desire to introduce the "short course" is the lack of teachers who are prepared for presenting this type of work, and the lack of suitable text-books for presenting general courses. Of course, as the demand for this type of teacher increases, people will make special preparation for the work. We may also confidently expect that suitable text-books will soon be forthcoming.

The junior high schools should point the way for the solution of the problem of reorganizing the program of studies in Texas. Houston will begin operating junior high schools in the fall of 1914, and there is a possibility that Dallas may soon establish the same type of school. It is the understanding of the writer that Houston plans to organize the seventh, eighth, and ninth grades into a junior high school. In that event, we shall watch with interest her method of providing for the great body of pupils who enter but do not finish the high school.

TYPES OF SHORT-COURSE PROGRAMS OF STUDIES.**TWO-YEAR COMMERCIAL COURSE OF THE ROXBURY HIGH SCHOOL,
BOSTON, MASS.****PHONOGRAPHY.**

I.	Periods.	Points.
English I.	10	10
Phonography I.	8	10
Typewriting I.	6	..
Physical Training I.	2	2
Office Hour	1	..
Study, special rooms	3	..
	—	—
Totals	30	22

II.	Periods.	Points.
English II.	7	7
Phonography	8	8
Typewriting	4	..
Commercial Arithmetic	3	3
Mercantile Law	3	3
Physical Training	2	2
Hygiene	1	1
Office Hour	1	..
Study, special rooms	1	..
	—	—
Totals	30	24

TWO-YEAR COMMERCIAL COURSE OF THE ROXBURY HIGH SCHOOL,
BOSTON, MASS.

BOOKKEEPING.

FIRST YEAR.

Subject.	Periods.	Points.
English I.	10	10
Bookkeeping I.	4	4
Commercial Arithmetic	4	4
Penmanship	4	2
Physical Training I.	2	2
Office Hour	1	..
Study	5	..
	—	—
Totals	30	22

SECOND YEAR.

Subject.	Periods.	Points.
English II.	7	7
Bookkeeping II.	8	7
Commercial Arithmetic II.	4	4
Mercantile Law	3	3
Physical Training II.	2	2
Hygiene	1	1
Office Hour	1	..
Study	4	..
	—	—
Totals	30	24

A *point* of work as defined by the Boston Board of Superintendents, is the amount of work represented by one period a week for one year in any study.

Eighty points are required for graduation. The prescribed subjects for graduation are:

- (1) Eight points in physical training.
- (2) One point in hygiene.
- (3) At least twelve points in English.
- (4) At least seven points in the same foreign language, or in phonography and typewriting.
- (5) At least four points in mathematics or in bookkeeping.
- (6) At least three points in history.
- (7) At least three points in science.

It will be noted that the capable pupil can, at the end of two years, easily adjust his curriculum so that he may go on to graduation.

TWO-YEAR COURSES OFFERED BY THE CHICAGO HIGH SCHOOLS.

Two-year courses in vocational subjects are offered in the high schools, for those who do not expect or are not able to take a full four years' course in the school. Each two years' course has a major subject, which receives a specially large proportion of time and credit. A student pursuing such a course will be required to follow it as outlined, in order to be well fitted for the occupation into which the major subject leads. Studies taken successfully in the two-year courses will receive credit towards graduation from the four-year course. In addition to the studies specified in the course, a pupil may select sufficient studies from the list of optionals to bring the total credits for the two years' work up to 8.5. On the successful completion of any of the two-year vocational courses, a certificate (not a diploma) will be awarded.

Two-year programs of studies are organized with each of the following subjects as majors: *Accounting, Phonography, Mechanical Drawing, Designing, Carpentry, Pattern Making, Electricity, Household Arts, Printing, Machine Shop, Horticulture*. The transition from these short courses to the general course, or a specialized curriculum, is made easy so that pupils may have every inducement to go on to graduation.

Only a few programs are given.

TWO-YEAR COURSE IN ACCOUNTING.

FIRST YEAR.

First Semester.	Per.	Cr.
Bookkeeping	10	.05
Business English	5	.05
Business Arithmetic	5	.05
Physiology	5	.05
Penmanship	5	.25
Physical Education	2	.01
	—	—
	32	2.35

Second Semester.	Per.	Cr.
Bookkeeping (including two periods of penmanship)	10	.05
Business English	5	.05
Business Arithmetic	5	.05
Physiography	5	.05
Typewriting	5	.25
Physical Education	2	.01
	32	2.35

SECOND YEAR.

First Semester.	Per.	Cr.
Bookkeeping (including two periods of penmanship)	5	.05
Business English	5	.05
Industrial History or Commercial Geography....	5	.05
Typewriting	5	.25
Physical Education	2	.01
	27	1.85

Second Semester.	Per.	Cr.
Bookkeeping (including two periods of penmanship)	10	.05
Business English	5	.05
Industrial History or Commercial Geography....	5	.05
Typewriting	5	.25
Physical Education	2	.01
	27	1.85

Stenography or any other study of equal credit may be substituted for physiography; if stenography is elected, it must be continued throughout the second year as an *elective*.

TWO-YEAR COURSE IN STENOGRAPHY.

FIRST YEAR.

First Semester.	Per.	Cr.
Stenography	5	.05
Typewriting	5	.25
Business English	5	.05
Business Arithmetic	5	.05
Physiology	5	.05
Business Forms and Penmanship	2	.01
Physical Education	2	.01
	29	2.45

Second Semester.	Per.	Cr.
Stenography	5	.05
Typewriting	5	.25
Business English	5	.05
Business Arithmetic	5	.05
Business Forms and Penmanship	2	.01
Physical Education	2	.01
	—	
	24	1.95

SECOND YEAR.

First Semester.	Per.	Cr.
Stenography	5	.05
Typewriting (including revision of stenographic transcripts)	10	.05
Business English	5	.05
Bookkeeping (including an average of one period a week of penmanship)	5	.25
Physical Education	2	.01
	—	
	27	1.85

Second Semester.	Per.	Cr.
Stenography	5	.05
Typewriting (including revision of stenographic transcripts)	10	.05
Business English	5	.05
Bookkeeping (including an average of one period a week of penmanship)	5	.25
Physical Education	2	.01
	—	
	27	1.85

TWO-YEAR COURSE IN PRINTING.

FIRST YEAR.

First Semester.	Per.	Cr.
Printing	10	.05
Business English	5	.05
Business Arithmetic	5	.05
Physiology	5	.05
Mechanical Drawing	5	.25
	—	
	30	2.25

Second Semester.	Per.	Cr.
Printing	10	.05
English	5	.05
Business Arithmetic	5	.05
Proof-reading and Punctuation	5	.05
Mechanical Drawing	5	.25
	—	—
	30	2.25

SECOND YEAR.

First Semester.	Per.	Cr.
Printing	15	.75
English	5	.05
History or Science	5 or 7	.05
Mechanical Drawing	5	.25
	—	—
	30 or 32	2.00

Second Semester.	Per.	Cr.
Printing	15	.75
English	5	.05
History or Science	5 or 7	.05
Mechanical Drawing	5	.25
	—	—
	30 or 32	2.00

TWO-YEAR COURSE IN ELECTRICITY.

FIRST YEAR.

First Semester.	Per.	Cr.
Woodworking	10	.05
Business English	5	.05
Shop Mathematics or Algebra	5	.05
Elementary Physics	7	.05
Mechanical Drawing	5	.25
	—	—
	32	2.25

Second Semester.	Per.	Cr.
Elementary Electricity	10	.05
Business English	5	.05
Shop Mathematics or Algebra	5	.05
Physiology	5	.05
Mechanical Drawing	5	.25
	—	—
	30	2.25

SECOND YEAR.

First Semester.	Per.	Cr.
Applied Electricity	10	.05
English	5	.05
Geometry	5	.05
Extra Electrical Work	5	.25
Freehand Drawing	5	.25
Mechanical Drawing	5	.25
	—	
	30	2.00
Second Semester.	Per.	Cr.
Applied Electricity	10	.05
English	5	.05
Geometry	5	.05
Extra Electrical Work	5	.25
Meehanical Drawing	5	.25
	—	
	30	2.00

TWO-YEAR COURSE IN CARPENTRY.

FIRST YEAR.

First Semester.	Per.	Cr.
Carpentry	10	.05
Business English	5	.05
Shop Mathematics or Algebra	5	.05
Physiology	5	.05
Architectural Drawing	5	.25
	—	
	30	2.25

Second Semester.	Per.	Cr.
Carpentry	10	.05
Business English	5	.05
Shop Mathematics or Algebra	5	.05
Architectural Drawing	10	.05
	—	
	30	2.00

SFCOND YEAR.

First Semester.	Per.	Cr.
Carpentry	20	1.00
English	5	.05
Geometry	5	.05
	—	
	30	2.00

Second Semester.	Per.	Cr.
Carpentry	10	.05
English	5	.05
Geometry	5	.05
Architectural Drawing	5	.25
Freehand Drawing	5	.25
	—	
	30	2.00

LUCY L. FLOWER TECHNICAL HIGH SHOOL, CHICAGO.

TWO-YEAR COURSES.

Two courses of study are offered, each centering during the second year around one major subject, *Household Arts or Household Science*. For the first year of these courses the required studies are the same for all students. The choice of a major subject will be made at the beginning of the second year.

FIRST YEAR.

First Semester.	Per.	Cr.
English	5	.05
Physiology	5	.05
Art	5	.25
Household Science	5	.25
Household Arts	5	.25
Music	2	.01
Physical Education	2	.01
	—	
	29	1.95

Second Semester.

Second Semester.	Per.	Cr.
English	5	.05
General Science	5	.05
Art	5	.25
Household Science	5	.25
Household Arts	5	.25
Music	2	.01
Physical Education	2	.01
	—	
	29	1.95

SECOND YEAR.

Household Science Course.

First Semester.	Per.	Cr.
Household Science	10	.05
Botany	7	.05
English	5	.05
Mathematics	5	.05
Physical Education	2	.01
	—	
	29	2.01

Second Semester.	Per.	Cr.
Household Science	10	.05
Botany	7	.05
English	5	.05
Industrial History or Commercial Geography.....	5	.05
Physical Education	2	.01
	29	2.01

Household Arts Course.

First Semester.	Per.	Cr.
Household Arts	15	.75
Art	5	.25
English	5	.05
Mathematics	5	.05
Physical Education	2.	.01
	32	2.01

Second Semester.	Per.	Cr.
Household Arts	15	.75
Art	5	.25
English	5	.05
Industrial History or Commercial Geography.....	5	.05
Physical Education	2.	.01
	32	2.01

TWO-YEAR COMMERCIAL COURSE RALSTON SHORT HIGH SCHOOL,
PITTSBURG, PA.

First Semester.	Second Semester.
English	English
Commercial Geography and Local Industries	Shorthand
Bookkeeping	Bookkeeping
Penmanship and Spelling	Penmanship and Spelling
Typewriting	Typewriting
Industrial Arts	Industrial Arts

SECOND YEAR.

First Semester.	Second Semester.
English	English
Commercial Arithmetic	Commercial Law
Shorthand	Shorthand
Bookkeeping	Office Practice
Typewriting	Typewriting
Industrial Arts	Industrial Arts

PROGRAMS OF STUDIES IN OPERATION IN TEXAS HIGH SCHOOLS.

The programs that follow are either taken from the latest catalogues of the schools, or are compiled from data furnished by the superintendents.

OUTLINE OF COURSES OF STUDY, HOUSTON HIGH SCHOOL, SHOWING SUBJECTS TAUGHT AND THE NUMBER OF RECITATIONS PER WEEK

CLASSICAL COURSE.

I.	II.
English (4)	English (4)
History (4)	History (4)
Algebra (5)	Algebra (5)
Latin (5)	Latin (5)
Phys. Geog. (3)	Biology (3)
Manual Training or Dom.	
Science (3)	
III.	IV.
English (4)	English (5)
History (4)	U. S. Hist. and Civ. (5)
Geometry (5)	Latin (5)
Latin (4)	Chemistry (5)
Physics (5)	Sol. Geom. or Ar. (3)

MODERN LANGUAGE COURSE.

I.	II.
English (4)	English (4)
History (4)	History (4)
Algebra (5)	Algebra (5)
German or Spanish (5)	German or Spanish (5)
Phys. Geog. (3)	Biology (3)
Manual Training or Dom.	
Science (3)	
III.	IV.
English (4)	English (5)
History (4)	U. S. Hist. and Civ. (5)
Geometry (5)	German or Spanish (5)
German or Spanish (5)	Chemistry (5)
Physics (5)	Sol. Geom. or Ar. (3)

COMMERCIAL COURSE.

I.	II.	III.
English (4)	English (4)	English (4)
History (4)	History (4)	History (4)
Algebra (5)	Typ'g and Sten. (5)	Typ'g and Sten. (5)
Lat., Ger. or Sp. (5)	Lat., Ger. or Sp. (5)	Lat., Ger. or Sp. (4)
Manual Training or Biology (3)		Com'l Arith. (5)
Dom. Science (3)		

MANUAL TRAINING COURSE.

I.

English (4)
History (4)
Algebra (5)
Lat., Ger. or Sp. (5)
Phys. Geog. (3)
Manual Training (3)

III.

English (4)
Manual Training (5)
Geometry (5)
Lat., Ger. or Sp. (4)
Physics (5)

II.

English (4)
Manual Training (5)
Algebra (5)
Lat., Ger. or Sp. (4)
Biology (3)

IV.

English (5)
U. S. Hist. and Civ. (5)
Lat., Ger. or Sp. (5)
Chemistry (5)
Manual Training (5)

DOMESTIC SCIENCE COURSE.

I.

English (4)
History (4)
Algebra (5)
Lat., Ger. or Sp. (5)
Phys. Geog. (3)
Domestic Science (3)

III.

English (4)
Domestic Science (5)
Geometry (5)
Lat., Ger. or Sp. (4)
Physics (5)

II.

English (4)
Domestic Science (5)
Algebra (5)
Lat., Ger. or Sp. (4)
Biology (3)

IV.

English (5)
U. S. Hist. and Civ. (5)
Latin, Ger. or Sp. (5)
Chemistry (5)
Domestic Science (5)

The Houston High School employs forty-four teachers.

Sixteen units are required for graduation.

The prescribed courses are:

English, 4 units.

History, 3 1/2 units.

Algebra, 2 units.

Every high-school pupil is required to take one period per week of gymnasium work.

Manual training and domestic science are required of all pupils in the first year; the former of the boys and the latter of the girls.

No pupil will be allowed to take more than twenty-three recitations per week, except by special permission of the principal of the High School.

A pupil who completes three years' work in the required courses, and also the course in the Commercial Department, will be awarded a certificate of the completion of the Commercial Course.

A pupil who completes the three required courses, and the course in manual training or domestic science, and one other, will be awarded a diploma in manual training or domestic science.

It will be observed that some of the high-school subjects are assigned only four recitations per week. The Houston High-School program of studies is organized along the line recommended by the Committee of Ten. This is the only high-school program so organized in Texas.

PROGRAM OF STUDIES OF THE FORT WORTH HIGH SCHOOL.

	Classical.				Scientific.				Industrial.			
	20	20	20	20	20	20	20	20	20	20	20	20
No. of Periods per Week:												
Year	1	2	3	4	1	2	3	4	1	2	3	4
English	5	5	5	5	5	5	5	5	5	5	5	5
Algebra	5	2	2	—	5	2	2	—	5	2	2	—
Plane Geometry	—	3	3	—	—	3	3	—	—	3	3	—
Solid Geometry and P. Trig.	—	—	—	*5	—	—	—	*5	—	—	—	*5
History	5	5	*5	—	5	5	*5	—	5	5	*5	—
Civics and American History	—	—	—	*5	—	—	—	*5	—	—	—	*5
Zoology and Botany	—	—	—	—	—	—	*5	—	—	—	—	*5
Physics	—	—	—	5	—	—	5	—	—	—	5	—
Chemistry	—	—	—	*5	—	—	5	—	—	—	5	—
Latin	5	5	5	5	†5	†5	—	—	—	—	—	—
French	—	—	*5	*5	—	—	—	—	—	—	—	—
German	—	—	—	—	†5	†5	—	—	—	—	—	—
Spanish	—	—	*5	*5	—	—	†5	†5	—	*5	*5	—
Manual Training	—	—	—	—	*5	—	—	—	*5	5	*5	*5
Domestic Science	—	—	—	—	—	*5	—	—	*5	†5	*5	*5
Domestic Art	—	—	—	—	—	*5	—	—	*5	†5	*5	*5
Commercial Course	—	—	—	—	—	*5	—	—	*5	—	—	*5

Studies marked with an (*) are elective; those marked with a (†) may be substituted for each other. Twenty recitations per week are required.

Designation of Work.—The figures 1, 2, 3 and 4 will denote the first, second, third, and fourth years, respectively: A and B will denote the first and second terms, respectively. English 4A will mean the English work of the fourth year during the first term.

The Fort Worth High School employs forty-two teachers.

The requirements for graduation are that sixteen units of work shall have been satisfactorily completed, ten of which units are required. A unit is defined as five recitations per week of not less than forty minutes each for thirty-six weeks.

Two periods of laboratory work are counted as equal to one class-room period and the preparation for it. Similar work will be estimated on the same basis.

The following subjects and units are required: English, four units; Mathematics, three units; History, two units.

All pupils are required to take four studies, unless for sufficient causes the Principal may increase or decrease the amount of work. Pupils may not drop elective courses without the permission of the Principal.

PROGRAM OF STUDIES OF THE CLEBURNE HIGH SCHOOL.

I.

English	5P
Algebra	5P
Ancient History	5P
Latin	5P
Physiography	5P+
Commercial Geography	5P
German	5P

II.

English	5P
Algebra	5P
Med.-Mod. History	5P
Elementary Physics	
(one-half year)	5P+
Physiology $\frac{1}{2}$ year	5P+
Botany	5P
German	5P
Latin	5P
Domestic Economy	
... 2 double P and 1 single P	

III.

English	5P
Plane Geometry	5P
English History	5P
Texas History	5P
Chemistry	5P+
Botany	5P+
Agriculture	5P+
Latin	5P
German	5P
Domestic Economy	
..... 2 double P 1 single P	

IV.

English	5P
Solid Geom. and Trig.	5P
Am. Hist. and Civ.	5P
Physics	5P+
Latin	5P
German	5P

All candidates for graduation are required to take arithmetic for one year, five times per week in the second, third, or fourth year.

The Cleburne High School employs twenty teachers. Sixteen units of work are required for graduation.

The following units are prescribed:

English, 3 units.

Science, 2 units.

History, 2 units.

Mathematics, $3\frac{1}{2}$ units, including Algebra, plane geometry, and arithmetic.

Total, $10\frac{1}{2}$ units.

The one-half unit in elementary physics is offered in the ninth grade in order that pupils who do not anticipate completing the high-school course may have an opportunity to get some notion of the forces that surround them.

There is one period in each daily program ordinarily called in the Cleburne High School the assembly period, which is thirty minutes in length, and is given over to such announcements as are necessary from time to time, to entertainment of a cultural value, and once each week to the study of current history, which is required of all pupils throughout the high school, and twice each week to the study of spelling, likewise required of all the pupils in the high school.

PROGRAM OF STUDIES OF THE MARSHALL HIGH SCHOOL.

I.

English	5P
Algebra	5P
Ancient History	5P
Physiography and Physiology	5P+
Latin	5P
Manual Training and Mechanical Drawing	5 double P
Dom. Economy ..	5 double P
Botany	5P+ (Agr. I.)

II.

English	5P
Algebra	5P
Med.-Mod. History	5P
Zoology and Horticulture	5P+ (1 term each.) (Agr. II.)
Manual Training and Mechanical Drawing ..	5 double P
Dom. Economy ..	5 double P
Latin	5P
German	5P

III.

English	5P
Plane Geometry	5P
English History	5P
Chemistry	5P+
Latin	5P
German	5P

IV.

English	5P
American History and Civics	5P
Solid Geometry and Trigonometry	5P
Physics	5P+

Manual Training and Mechanical Drawing	Latin	5P
.....5 double P	German	5P
Dom. Economy...5 double P	Manual Training and Mechanical Drawing	
Agriculture5P+5 double P	
	Dom Economy..5 double P	
	Agriculture5P+	

The Marshall High School employs twelve teachers. Sixteen units are required for graduation.

The following units are prescribed:

English, 4 units.

History, 3 units, including Ancient and Mediæval-Modern History.

Algebra, 2 units.

Plane Geometry, 1 unit.

Physiology, $\frac{1}{2}$ unit.

Physiography, $\frac{1}{2}$ unit.

Total, 11 units.

After this year (1914-1915) it is planned to allow girls who elect the Domestic Economy course to substitute a modern language for plane geometry, and all pupils who elect the Agriculture or Arts course to take a year in history and a year in American History and Civics instead of three years in history.

PROGRAM OF STUDIES OF THE SAN MARCOS HIGH SCHOOL.

I.

English	5P
Algebra	5P
Ancient History	5P
Latin	5P
Phyisography	3P+
Manual Training..4 double P	
Dom. Economy..4 double P	

II.

English	5P
Algebra	5P
Med.-Mod. History	5P
Latin	5P
Spanish	5P
Physiology	3P
Manual Training 3 double P	
Dom. Economy..3 double P	

III.

English	5P
Plane Geometry	5P
English History	5P
Latin	5P
Spanish	5P
Chemistry	5P+
Manual Training..3 double P	
Dom. Economy..3 double P	

IV.

English	5P
Plane Geom. and Solid Geom.	5P
American History and Civics	5P
Latin	5P
Spanish	5P
Physics	5P+

The San Marcos High School employs nine teachers.

Sixteen units are required for graduation. The prescribed units are:

English, 4 units.

History, 3 units (Ancient, Mediæval-Modern, American and Civics).

Algebra, 2 units.

Plane Geometry, 1 unit.

Total, 10 units.

COURSE OF STUDY FOR THE HILLSBORO HIGH SCHOOL.

Year.	Term.	English.	Mathematics.	History.	Science.	Latin.	German.
I.	1st.	Elementary Composition, Literature.	New School Algebra.		Phys. Geography, *Gen. Science.	*Latin Lessons.	
	2nd.	English Grammar, Literature.	New School Algebra.		Physiology.	*Latin Lessons.	
		Comp. and Rhetoric, Literature.	New School Algebra.	Ancient History.	*Com. Geography.		*Elementarbuch.
II.	1st.	Comp. and Rhetoric, Literature.				*Caesar.	
	2nd.	Comp. and Rhetoric, Literature.	Arithmetic.	Ancient History.		*Caesar.	*Elementarbuch.
III.	1st.	American Lit.	Piano Geometry, bks. I and II.	M. & M. History *English History.	*Chemistry.	*Cicer.	*German Reader.
	2nd.	NIXth Century English Literature.	Plane Geometry, bks. III, IV and V.	M. & M. History *English History.	*Chemistry.	*Virgil.	*German Reader.
IV.	1st.	English Literature.	*Solid Geometry.	*American History.	*Physics.	*Cicer.	*German Literature.
	2nd.	English Literature.	*Trigonometry.	Civics.	*Physics.	*Virgil.	*German Literature.

Four courses constitute a year's work. Sixteen courses are required for graduation. Courses printed without a (*) are required of all pupils, others are elective. All pupils must take either physics or chemistry. Those who elect Latin must take the first two years. Those who elect German must take the first two years.

The Hillsboro High School employs eight teachers. The prescribed subjects are:

Ancient History, 1 unit.
 Mediæval History, 1 unit.
 Algebra, $\frac{1}{2}$ unit.
 Arithmetic, $\frac{1}{2}$ unit.
 Plane Geometry, 1 unit.
 Physical Geography, $\frac{1}{2}$ unit.
 Physiology, $\frac{1}{2}$ unit.
 Physics or Chemistry, 1 unit.
 Total, 11 units.

PROGRAM OF STUDIES OF THE HENDERSON HIGH SCHOOL.

I.

English 5P
 Algebra 5P
 Arithmetic 5P
 Physiology 5P
 Latin 5P
 Ancient History 5P

II.

English 5P
 Algebra 5P
 Med.-Mod. History 5P
 Latin 5P
 Physiography 5P

III.

English 5P
 Plane Geometry 5P
 Chemistry 5P+
 Latin 5P
 English History 5P
 German 5P

IV.

English 5P
 Solid Geom. and Trig. 5P
 Physics 5P+
 American History and
 Civics 5P
 Latin 5P
 German 5P

The Henderson High School employs five teachers.

Fourteen affiliated units are required for graduation.

The following units are prescribed:

English, 3 units (affiliated).
 Algebra, $1\frac{1}{2}$ units (affiliated).
 Plane Geometry, 1 unit (affiliated).
 History and Civics, 3 units (affiliated).
 Chemistry, 1 unit (affiliated).
 Solid Geometry, $\frac{1}{2}$ unit (affiliated).

The prescribed units are not measured by the time necessary to complete them. For example, English must be carried for four years.

PROGRAM OF STUDIES OF THE WINNSBORO HIGH SCHOOL.

I.	II.
English 5P	English 5P
Algebra 5P	Algebra 5P
Ancient History 5P	Med.-Mod. History 5P
Latin 5P	Latin 5P
Physiography 2 double periods per week the first half year and 2 double periods per week the second half year.	Physiology 3 double periods per week the first half year and 2 double periods per week the second half year.
Manual Training 3 double periods per week the first half year and 2 double periods per week the second half year.	Manual Training 2 double periods per week the first half year and 3 double periods per week the second half year.
Domestic Science 3 double periods per week the first half year and 2 double periods per week the second half year.	Domestic Science 2 double periods per week the first half year and 3 double periods per week the second half year.
III.	IV.
English 5P	English 5P
Physics 5P+	American History 5P
Plane Geometry 5P	Civics 5P (One-half year.)
Latin 5P	Plane Geometry 5P (One-half year.)
Agriculture 5P+	Algebra and Arithmetic Review 5P (One-half year.)
	Chemistry 5P+
	Latin 5P
	Agriculture 5P+

The Winnsboro High School employs four teachers.

Seventeen units are required for graduation, a unit representing five forty-minute periods per week for one year.

Following are the credits allowed in each subject:

English, 4 units; History and Civics, 3 units; Latin, 4 units; Algebra, 2 units; Geometry, Plane, $1\frac{1}{2}$ units; Algebra and Arithmetic Review, $\frac{1}{2}$ unit; Physics, 1 unit; Chemistry, 1 unit; Physiography, $\frac{1}{2}$ unit; Physiology, $\frac{1}{2}$ unit; Manual Training, 1 unit; Domestic Science, 1 unit; Agriculture, 2 units.

English, history, mathematics, civics, physics, and chemistry, representing 13 units, are required of all pupils. A pupil may

elect Latin, 4 units, or the industrial courses and physiography, 4 units, the boys taking manual training and the girls taking domestic science.

PROGRAM OF STUDIES OF THE BELLEVUE HIGH SCHOOL.

I.	II.
English	5P
Algebra	5P
Arithmetic	5P
Physiology	3P+
Latin	5P
III.	IV.
English	5P
Plane Geometry	5P
History, Med.-Mod	5P
Latin	5P
	American History and Civics
	Physics
	Latin

All laboratory periods in physiology, physical geography, and physics are 80 minutes.

The Bellevue High School employs three teachers.

Seventeen units are required for graduation.

Due to the limited teaching force, no electives or alternates are offered.

REFERENCES.

A Trade School for Girls. U. S. Bureau of Education,
ANGELL, J. R. Bulletin No. 17, 1913.

Doctrine of Formal Discipline in the Light of the Principles of General Psychology. Ed. Rev., June, 1908.

BAGLEY, W. C. *The Educative Process.* Macmillan.

BALLOU, F. W. *High-School Organization.* The World Book Co.

BOLTON, F. E. *The Secondary School System of Germany.* Appleton.

BOOK, W. F. *Why Pupils Drop Out of High School.* Ped. Sem., 11:204.

BOYNTON, F. D. *A Six-Year High-School Course.* Ed. Rev., 20:515.

BROOKS, S. D. *Electives in the High School.* School Review, 9:593.

BROOKS, S. D. *The Scope and the Limitations of a small High School.* Education, 22:434.

BROWN, E. E. *The Making of Our Middle Schools.* Longmans.

BROWN, J. F. *The American High School.* Macmillan.

BRUBAKER, A. R. *Some Adjustments in Secondary Education.* Ed., 24:613.

BUTLER, N. M. *Scope and Function of Secondary Education.* Ed. Rev., 15:15.

CARLTON, F. T. *Education and Industrial Evolution.* Macmillan.

COLVIN, S. S.

Some Facts in Partial Justification of the So-called Dogma of Formal Discipline.

Bulletin of Univ. of Ill., Vol. VII., No. XXVI.

CUBBERLEY, E.

Changing Conceptions of Education.

Houghton.

DAVIS, C. O.

High School Course of Study.

The World Book Co.

DE GARMO, CHARLES

Principles of Secondary Education.

Macmillan.

DUTTON AND SNEDDEN

Administration of Public Education in the United States.

Macmillan.

ELLIOTT, E. C.

Equality of Opportunity for All: How Secured?

N. E. A. Proc., 1908.

ELLIFF, J. D.

*A Study of the Principles Underlying the Foundations of the Modern High School.*South Educational Review,
Dec., 1905, Jan., 1906.

FARRINGTON, F. E.

French Secondary Schools.

Longmans.

GAY, C. E.

Why Pupils Leave the High School Without Graduating.

Education, 22:300.

HANUS, P. H.

Secondary Education.

Ed. Rev., 17:346.

HALL, G. S.

The High School as the People's College.

Ped. Sem., 9:63.

HARPER, W. R.

The High School of the Future.

School Review, Jan., 1903.

HARRIS, W. T.

Psychological Foundations of Education.

HEDGEPATH, V. W. B.

Six-Year High School Plan at Goshen, Indiana.

School Review, Jan., 1905.

HOLLISTER, H. A.
The Administration of Education in a Democracy.
Scribner's.

HOLLISTER, H. A.
High School Administration.
D. C. Heath.

JOHNSTON, C. H.
High School Education.
Scribner's.

JOHNSTON, C. H.
The Modern High School.
Scribner's.

JUDD, C. H.
On Scientific Study of High School Problems.
School Review, Feb., 1910.

JARDON, D. S.
The High-School Course.
Ed. Rev., 36:372.

LEAVITT, F. M.
Examples of Industrial Education.
Univ. of Chicago Press.

MUNROE, PAUL
Principles of Secondary Education.
Macmillan.

O'SHEA, M. V.
Education as Adjustment.
Longmans.

PEARSON, H. S.
Industrial Education.
Houghton.

.....
Report of the Committee of Nine.
N. E. A. Proc., 1911.

.....
Report of the Committee on College Entrance Requirements.
N. E. A. Proc., 1899.

.....
Report of the Committee of Ten.
N. E. A. Proc., 1894.
American Book Co.

.....
Report of the Carnegie Foundation for 1909 and 1910.

RUSSELL, J. E.
German Higher Schools.
Longmans.

SACHS, JULIUS
The American Secondary School.
(The German point of view.)
Macmillan.

SACHS, JULIUS
The Departmental Organization of Secondary Schools.
Education, 27:484.

SNEDDON, D.
The Opportunity of the Small High School.
School Review, Feb., 1912.

SNEDDEN AND ALLEN
School Reports and School Efficiency.

SNEDDEN, D. S.
Six-Year High-School Course.
Ed. Rev., Dec., 1903, p. 525.

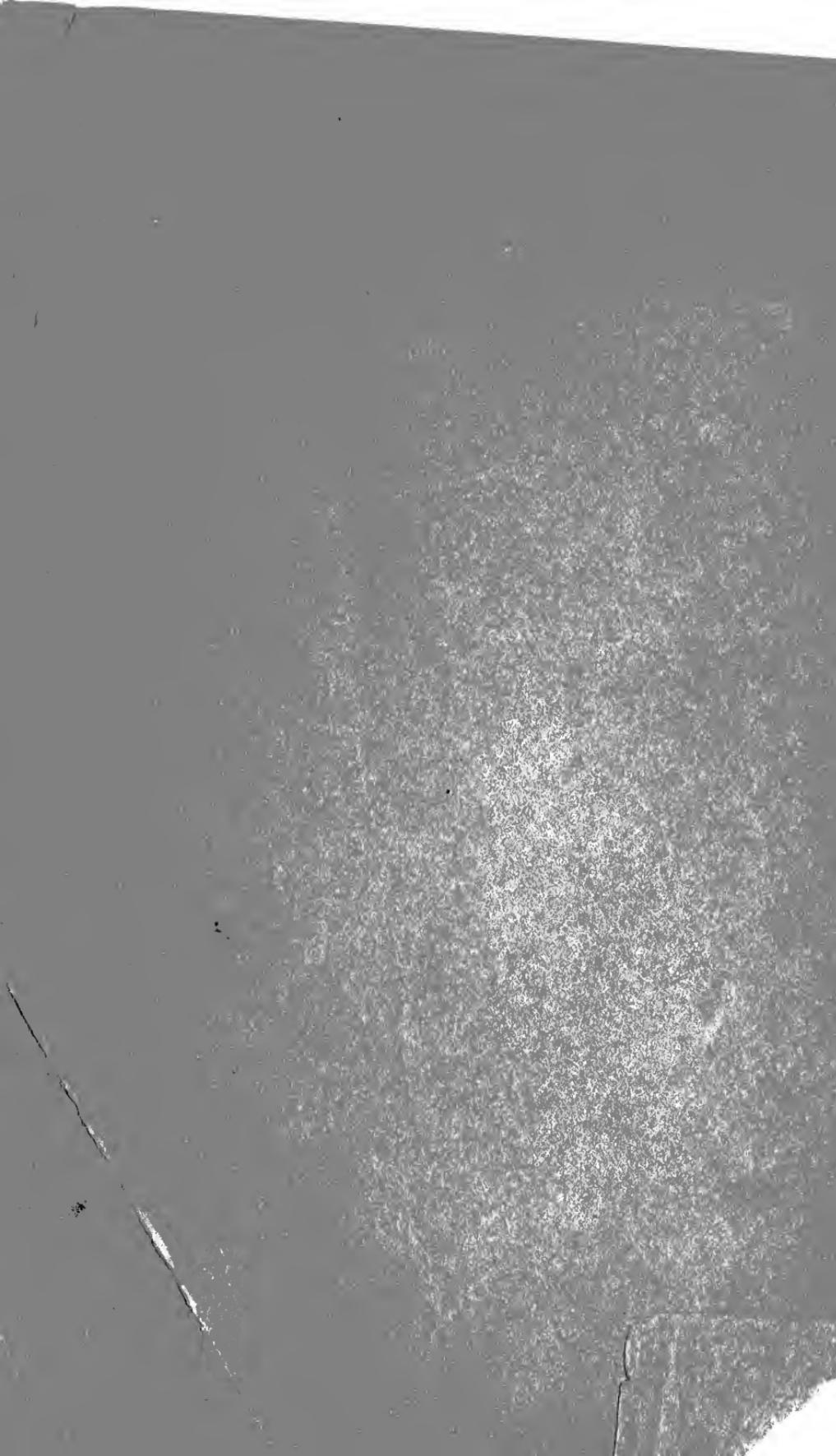
TATE, W. K.
Some Suggestive Features of the Swiss School System.
U. S. Bureau of Education Bulletin No. 56, 1913.

WEEKS, A. D.
The Education of Tomorrow.
Sturgis and Walton.

WHITNEY, F. P.
Differentiation of Courses in the Seventh and Eighth Grades.
Ed. Rev., Feb., 1911.

YALDIN, J. E.
The Short Course Trade School.
Reprint from annals of the American Academy
of Political and Social Science for Jan., 1909.

YOUNMANS, E. L.
Culture Demanded by Modern Life.
Appleton.



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